# Preliminary Human Health Risk Assessment Former Railroad Yard in City of Eureka, Humboldt County, California

January 2008

Prepared for:

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#### 1.0 INTRODUCTION

This report, figures, tables and photos may be used as exhibits.

I have been retained by Humboldt Baykeeper and Ecological Rights Foundation to perform a preliminary evaluation of the current and potential future human health risk due to residual chemicals at the former railroad yard in the city of Eureka. In order to perform this evaluation I reviewed the reports and documents presented in Appendix A and had communication with plaintiff's experts, consultants, and attorneys. Based on the review of these reports following are some pertinent facts related to the site.

Appendix C includes a copy of my resume, publications, rate sheet and the cases in which I have testified at trial or deposition.

#### 2.0 SITE SETTING

The site occupies about 30 acres in the northwest area of the city of Eureka, Humboldt County, California. Figure 1 shows the location of the site that is bordered by:

- Waterfront Drive to the northwest beyond which lies the Humboldt Bay,
- Broadway Street to the east,
- Clark Slough to the west and
- Commercial light industrial plots to the South

#### 3.0 HISTORIC OPERATIONS

The site was used as a railroad switching, maintenance and freight yard from the late 1800's until mid 1980s. Prior to industrial operations the site was a tidal marsh except for a railroad track. The tidal marsh was subsequently filled and various railroad maintenance buildings were built. Operations at the site have resulted in spills and leaks of various solid and hazardous substances that include:

- Fueling and repair of locomotives and railroad cars,
- Storage of Bunker C oil in above ground storage tanks,
- Use of diesel fuel on site,
- Storage of fuel in underground storage tanks,
- Disposal of a variety of waste oils in unlined pits,
- Cleaning and dismantling of railroad cars,
- Use of herbicides along railroad tracks,
- Storage of old railroad tracks, equipment and various other hazardous wastes,
- Various other industrial operations, and
- Incineration of waste materials.

These activities have resulted in and continue to cause the release of several chemicals on site such that the soil, surface water, storm water, groundwater and sediments on-site;

sediments in the Clark Slough; sediments in the Humboldt Bay; and surface water off-site have been impacted.

#### 4.0 HISTORY OF INVESTIGATION

Since 1988 investigations have been performed at the site to characterize soil, groundwater, sediment, stormwater, and surface water impacts. These have included:

- Installation of monitoring wells,
- Collection of soil samples and their analysis,
- Trenching operations to observe subsurface soils and collect relevant data,
- Periodic monitoring of groundwater wells,
- Periodic surface water monitoring,
- Soil leachability tests,
- Storm water runoff monitoring, and
- Surface water monitoring

Based on the above data collection efforts, chemicals of potential concern include but are not limited to metals, petroleum hydrocarbons, volatile hydrocarbons, chlorinated solvents, polyaromatic hydrocarbons (PAH), poly-chlorinated biphenyls (PCBs), dioxins, and furans. For several of these chemicals adequate quantity of data has not been collected to characterize the nature and extent of the impacts.

The data collected based on the above investigations have been evaluated in this report. It was assumed that the above data meets all relevant QA/QC requirements and the original laboratory reports were not reviewed. The data presented in these tables has been compiled from the various reports and references included in Appendix A.

#### 5.0 LAND USE

Currently the site is inactive, surrounded by a chain link fence but potentially accessible to trespassers. Several pictures of the site taken in July of 2007 and January 2008 are presented in Appendix B. The site is currently zoned public. However, in future the site may be developed for residential and/or commercial use with recreational facilities (park like setting). Information about land use is used to determine the current and reasonable future receptors.

#### 6.0 CONCEPTUAL EXPOSURE MODEL

A site conceptual exposure model identifies the receptors, potential exposure pathways and routes of exposure under current and reasonable future conditions. An exposure pathway describes a path that the chemical takes from the source to the exposed receptor. A complete exposure pathway consists of the following four elements.

- A source of chemical,
- A transport media,

- A point of contact with the receptor, and
- An exposure route that causes the chemical to enter a receptor's body thereby causing potential adverse effects.

Each of these are discussed below:

#### 6.1 Source of Chemicals

The source of chemicals for the various pathways includes the residual concentrations in the soil, Azone groundwater, B-zone groundwater, sediments both on-site and off site. Additionally, waste currently present on-site represents an on-going source. These sources could potentially include a large number of toxic chemicals. (Refer to pictures in Appendix B). Because the residual chemicals and the currently existing waste on-site have not been adequately characterized, additional investigation may identify chemicals of potential concern not included in site characterization activities to date.

#### **6.2** Transport Media

The media of concern include:

- Surface soils.
- Soil vapors,
- Subsurface soils,
- Shallow groundwater (A zone),
- Deep groundwater (B zone),
- Surface water runoff.
- Storm water runoff,
- Sediments.
- Marine organisms consumed by human beings, and
- Any potential produce grown on site for human consumption.

#### 6.3 Point of Contact and Exposure Route

In general routes of exposure include ingestion of soil, water, produce, and marine organisms; inhalation of vapors and particulates; dermal contact with soil, groundwater surface water, and sediment.

#### 6.4 Complete Routes of Exposure

Based on the above site information following are the complete routes of exposure:

#### 6.5 Current Conditions: On-Site

Under current conditions persons, including trespassers (Refer to Appendix B for picture of a trespasser), or the property's agents and/or employees may enter the property and be exposed to site-specific chemicals by the following exposure pathways:

- Ingestion of surficial soil, outdoor inhalation of particulates with absorbed chemicals.
- Outdoor Inhalation of vapors emitted from soil,
- Outdoor inhalation of vapors emitted from groundwater,
- Dermal contact with sediment,
- Dermal contact with surface water, and
- Dermal contact with soil.

#### 6.6 Current Conditions: Off-Site

In addition to trespassers or others visiting the site, local residents and visitors consume fish and other marine organisms. Thus the ingestion of seafood is a significant route of exposure. Additional details of this pathway and information about fisheries are discussed in Section 7.0

#### **6.7** Future Conditions: On-Site (During Site Development Phase)

Currently the site is vacant; however in the future, it may be developed. Although the specifics of future development are not known, development of the site will necessarily include various construction activities such as:

- Grading and excavation of soil,
- Construction of foundations.
- Construction of buildings,
- Construction of utilities, and
- Landscaping activities.

Under these conditions a construction worker would be a receptor who could be exposed to chemicals by a combination of the following:

- Accidental ingestion of soil,
- Accidental ingestion of water,
- Dermal contact with soil.
- Dermal contact with sediments,
- Dermal contact with surface water,
- Dermal contact with groundwater, and
- Outdoor Inhalation of vapors and particulates.

#### **6.8** Future Conditions: On-Site (Post Development)

Beyond the period during which the site is under development, receptors of concern will include residents and/or commercial workers; visitors; maintenance workers and construction workers. Of these the most critical potential receptor (those with the highest

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risk) would be the residents who would get exposed to chemicals. Complete exposure pathways for residents include:

- Accidental ingestion of soil,
- Dermal contact with soil,
- Dermal contact with water,
- Outdoor inhalation of particulates from soil,
- Outdoor inhalation of vapors from soil,
- Indoor inhalation of vapors from groundwater,
- Ingestion of produce that may bioaccumulate chemicals, from soil and groundwater, and
- Ingestion of fish, oysters and other organisms from the Bay that may bioaccumulate chemicals from surface water and sediments.

#### **6.9** Future Conditions: Off-Site

The exposure pathways will be identical to current conditions as discussed in Section 6.6. Also refer to Section 7.0.

#### **6.10** Summary of Exposure Pathways

Based on the above, Table 1 presents a summary of the complete exposure pathways.

#### 7.0 Humboldt Bay Fisheries Information

Humboldt Bay is one of the largest bays on the west coast, second largest in California, and is the only deep water port between Coos Bay, OR and San Francisco. The greater Eureka area is the largest urban area on the Pacific Coast from San Francisco to Portland, OR. Humboldt Bay was added to the list of impaired water bodies (Section 303(d)) based on evidence of bioaccumulation of dioxin compounds in fish and shellfish and exceedence of OEHHA screening values.

Humboldt Bay has been a fishing resource for thousands of years for Native Americans. Initial European influence and development increased due to the California Gold Rush, but as the Gold Rush subsided, Humboldt Bay became more important for its natural resources, one of which is the salmon industry.

Other fishery species became important to the people and economy of the Humboldt Bay area. The Bay comprises a variety of complex habitats that support 95 species of fish, over 180 species of invertebrates, and 30 species of clams, oysters, and mussels.

Eureka's livelihood remains linked to Humboldt Bay the Pacific Ocean, and related industries, especially fishing. Humboldt Bay is the location of one of the west coast's largest commercial oyster farming operations (largest in California), which began in the early 1900s.

Two marine aquaculture businesses are located in Eureka that produce bay and sea mussels; Eastern, European, Kumamoto, and Pacific oysters; littlenecks, Manila, and Quahog clams; rock scallops; ulva; nori; tube worms; gracillaria; and blood worms.

Humboldt Bay consists of North Bay, Central Bay, and South Bay. Eureka is located along the south shore of North Bay. In a study conducted from August 2003 to August 2005, exclusively in North Bay, 49 fish species representing 22 families were collected using six gear types from three different habitats in the bay (eelgrass meadows, oyster culture, and mudflat). The species collected in the largest numbers included the shiner surfperch, English sole, northern anchovy, speckled sanddab, and Pacific herring. Also collected in significant numbers were the topsmelt, Pacific sardine, bay pipefish, walleye surfperch, bay goby, surf smelt and staghorn sculpin.

Bioaccumulation has been documented for certain chemicals that can progress up the food chain from invertebrates to shellfish to various fish species and to humans.

A brief discussion of commercial recreational and substance fishing is presented below.

The commercial fishing industry included 159 vessels that delivered landings to Eureka and 42 vessels that delivered landings to Fields Landing in 2000 from West Coast Fisheries. Residents of Eureka owned 68 vessels and of Fields Landing owned 8 vessels in 2000. Eureka residents also participated in North Pacific Fisheries with 5 vessels. Eureka had at least one commercial fish processing plant in 2000.

#### 7.1 Recreational Fishing

At least two sport fishing business vessel permits in 2003 were registered in Eureka that operated in West Coast Fisheries. The community received a total of 49,983 commercial passenger fishing vessel landings in 2000 by 11,574 anglers. Eureka and Fields Landing residents also participated in North Pacific Fisheries with 107 sport fishing licenses for Alaskan fisheries in 2000.

The Washington clam fishery is essentially a sport fishery. Two principal species of Washington clams are harvested in California. The principal species sought is the Washington clam. One of the best yielding localities for working to clean is Humboldt Bay. The second most popular species is the butter clam. And only one locality in California Humboldt Bay near Fields Landing is this clam plentiful enough to support a minor fishery. In a recent survey, the Washington clam and the butter clam comprised 20% and 13%, respectively of all species taken in Humboldt Bay.

#### **7.2** Subsistence Fishing

Community members engage in subsistence fishing from marine and stream resources within and surrounding Eureka. These include nontribal and tribal people, including members of the Wiyot Tribe.

#### 7.3 Dungeness Crab

Humboldt Bay is very important to the Dungeness crab fisheries from both a commercial and recreational sports fishing standpoint. However, commercial takings of Dungeness crabs far outweigh that of sports fishing.

Dungeness crab larvae are planktonic for up to 125 days and go through six larval stages. Estuaries such as San Francisco and Humboldt Bays are important nursery areas. In particular, the eelgrass habitat is very important to the juvenile Dungeness crab fishery.

About 200 commercial vessels are based in Eureka. Fish landings on the entire North Coast in 2004 exceeded 38 million pounds consisting of groundfish, tuna, salmon and other fish species, but Dungeness crab, of which Humboldt is famous far and wide, represented nearly half the area's catch.

# 8.0 COMPARISON OF CONCENTRATIONS WITH PRELIMINARY RISK BASED TARGET LEVELS

#### **8.1** Soil

Tables 2(a) to 2(h) summarize the concentrations of various chemicals analysed in the soil samples collected during the period of 1988 to 2003. The location of soil sampling points is shown in the figures in the references included in Appendix B. The tables do not include analytes that had less than 2 data points or those that were non-detect in all the samples. Note the detection limits were not known. The tables compare the concentrations of the chemicals with the preliminary remediation goals (PRGs) and the California human health screening levels (CHHSLs) for both residential and industrial soil.

PRGs are risk-based concentrations developed by the EPA as tools for evaluating and cleaning up contaminated sites (USEPA, October 2004). CHHSLs are thresholds of concern for risks to human health for various hazardous chemicals developed by California EPA (Cal/EPA, January 2005).

The maximum detected value of each chemical sampled during the year was compared to the residential and industrial PRGs and CHHSLs.

Table 3 lists the chemicals exceeding PRG's and CHHSL's for each year. Specifically, the following chemicals exceed the residential PRGs:

- Antimony
- Arsenic
- Copper
- Lead
- Benzene
- Benzo(a)pyrene

In addition to the above chemicals, chromium and cadmium exceed the residential CHHSL's. Of the above listed chemicals, arsenic, lead and benzene exceed the industrial PRGs. Additionally benzo(a)pyrene, cadmium and chromium exceed the industrial CHHSLs.

The adverse human health effects associated with the above chemicals are discussed in Section 9.0.

#### 8.2 Groundwater

Tables 4(a) to 4(t) summarize the concentrations of various chemicals of concern found in the groundwater samples collected from the monitoring wells. The location of groundwater monitoring wells is shown in the figures in the references included in Appendix B. The tables also show the comparison of the maximum detected concentrations, maximum non-detect concentrations, comparison value, the preliminary remediation goals (PRGs), and maximum contaminant level (MCL).

PRGs are risk-based concentrations developed by the EPA for evaluating and cleaning up contaminated sites (USEPA, October 2004). MCL's refer to the highest level of a contaminant that is allowed in drinking water (USEPA, June 2003). The comparison values are the higher of the (i) maximum detected value and (ii) half of the maximum non-detect value. The comparison values for each chemical was compared with both the PRG and MCL.

Table 5 lists the chemicals for which the comparison values exceeded the PRGs and MCLs levels in each of the monitoring wells.

#### Specifically:

- Arsenic and lead exceed PRG in all the monitoring wells.
- Benzene exceeds PRG in well MW-11B.
- Cadmium exceeds PRG and MCL values in well MW-10A.
- Lead exceeds MCL in most of the wells except MW-11A, 11B, 12A and P9A.
- Arsenic exceeds MCL in wells MW-3A and MW-6A.

Based on the above; arsenic, lead, benzene and cadmium exceed either MCLs or PRGs. The adverse health effects associated with exposure to these chemicals is discussed in Section 9.0.

#### 8.3 Sediments

Tables 6(a) and 6(b) list the sediment data collected at the site in July 2000 and July 2007. Clearly PCBs, DDT, and DDE have been detected in the sediments.

In addition dioxins and furans have also been measured in sediment samples in January 2008 (SED-1 to SED-4). Figure 1 and Figure 2 shows the location of these samples. Of

these SED-2 located at the point of discharge to the Clark Slough had the highest concentrations. These data are presented in Table 7. None of the soil or groundwater samples were analyzed for the constituents presented in Table 7.

These samples therefore suggests the following:

- 1. Sites characterization to date has been deficient in that no data is available to determine the extent of the dioxins, PCBs, and furans impact on site soil and groundwater.
- 2. Additional investigation is necessary to determine the presence and extent of these chemicals in soil and groundwater
- 3. Dioxins and furans in surface water and sediment are accumulated by aquatic organisms and bioaccumulated through the aquatic food chain. The presence of these chemicals in the sediment can result in unacceptably high concentrations of these chemicals in the edible fish and shellfish in Clark Slough and Humboldt Bay resulting in significant adverse health effects.
- 4. Dioxins, furans, PCBs and other hazardous chemicals in the sediments on site and at the discharge locations can be transported to the Bay by surface runoff and groundwater, therefore further increasing concentrations in the Bay and accumulation in the food chain.

#### 8.4 Summary Of Chemicals That Exceed Target Levels

Based on the above, the following chemicals exceed one or more of the risk based target levels in one or more media (soil, groundwater, sediments, etc):

- Antimony
- Arsenic
- Cadmium
- Copper
- Lead
- Benzene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Dioxins
- Furans, and
- PCBs

# 9.0 ADVERSE HEALTH EFFECT OF CHEMICALS THAT EXCEED TARGET LEVELS

Adverse health effects associated with the above listed chemicals are briefly discussed below:

#### 9.1 Arsenic

Arsenic has been known to cause adverse effects when inhaled or ingested in high levels. Breathing high levels of inorganic arsenic can cause sore throat and lung irritation. Ingestion of inorganic arsenic increases risk of skin, liver, bladder and lung cancer. Exposure to lower levels is known to damage blood vessels and decrease production of blood cells. Animal studies have shown organic forms of arsenic are less toxic than inorganic forms. Animal studies also show large doses of arsenic can cause fetal malformations and fetal death. Also long term exposure to arsenic in children may result in lower IQ and increase in mortality in young adults. Fish and shellfish can accumulate arsenic. (ATSDR Arsenic, August 2007)

#### **9.2 Lead**

Inorganic lead is considered to be carcinogenic. Lead can affect almost every organ and system in the body and affect the nervous system. High level exposures to lead have known to damage the brain and kidney. Muscle weakness and anemia have been attributed to lead exposure in both adults and children. High levels of lead exposure have been known to cause miscarriage in pregnant women. In infants the effects of lead exposure can result in decreased mental ability and reduced growth. (ATSDR Lead, August 2007)

#### 9.3 Cadmium

The health effects of cadmium are similar in adults and children. Breathing high levels of cadmium damages the lungs and can result in death. Vomiting and diarrhea are common side-effect of eating food with high cadmium levels. Cadmium is known to buildup in the kidneys and can result in kidney disease. Animal studies indicate that cadmium will affect the birth weight when exposed to high levels during pregnancy. (ATSDR Cadmium, June 1999)

#### 9.4 Benzene

Benzene mainly affects the blood and bone marrow decreasing the blood cell count and causing anemia and affecting the immune system. Breathing high levels of benzene results in drowsiness, dizziness, rapid heart rate and unconsciousness. At very high levels it can result in death. Eating or drinking foods with high benzene is known to cause dizziness, sleepiness, stomach irritation and even death. The effect of benzene in children is similar to that seen in adults and benzene can pass from mother's blood to a fetus. Animal studies indicate delayed bone formations and bone marrow damage when pregnant animals breathed benzene. (ATSDR Benzene, August 2007)

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#### 9.5 Antimony

Breathing high levels of antimony is known to cause eye and lung irritation. It is also known to cause stomach ulcers, vomiting and diarrhea. Animal studies indicate that short-term exposure to very high levels of antimony causes lung, heart, liver, and kidney damage and result in death. Problems with fertility were also observed. Ingestion of antimony causes vomiting and stomach irritations. Antimony also causes skin irritation on dermal contact. (ATSDR Antimony and compounds, September 1995)

#### 9.6 Copper

Inhalation at high levels of copper is known to cause irritation of the throat and nose. Ingestion of copper can cause nausea, diarrhea, and vomiting. At very high levels it can damage the liver and kidney. The effects of copper exposure are similar for adults and children. But animal studies indicate that young children may have more severe effects than adults for the same dose level. A small percentage of infants are unusually sensitive to copper. (ATSDR Copper, September 2004)

#### 9.7 Chromium

Dermal contact with chromium (III) and (VI) compounds has been known to have resulted in swelling, dryness, scaling and fissuring of the skin. Chromium (VI) is recognized as a human carcinogen via inhalation. Oral exposure to chromium (VI) can result in oral ulcers, diarrhea, abdominal pain, vomiting and possible damage of liver and kidney. Animal studies show birth defects in animals exposed to chromium (VI). (ATSDR Chromium, February 2001)

#### 9.8 Benzo(a)pyrene

Benzo(a)pyrene is considered to be an animal carcinogen and a probable human carcinogen also. Animal studies have shown exposure to benzo(a)pyrene to result in tumors when ingested or inhaled for long durations. Birth defects, lower body weight and fertility issues result when benzo(a)pyrene exposure occurred during pregnancy. (USDHHS, August 1995)

#### 9.9 Benzo(a)anthracene

Benzo(a)anthracene has been known to cause tumors in lab animal tests when ingested or inhaled. It has been known as an animal carcinogen and a probable human carcinogen. Dermal contact with Benzo(a)anthracene is known to cause skin cancer in lab animals. Gastrointestinal changes and enzyme alterations at large doses have been observed in animal studies. Animal studies also indicate that high dose exposure leads to higher rates of birth defects and lower body weights. (ATSDR, September 1996 and USDHHS, August 1995)

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#### 9.10 Dioxins and Furans

Dioxins and furans are a family of chemically related compounds that share a similar chemical structure. Of these 2, 3, 7, 8- TCDD is the most toxic and the one most studied. Dioxins in surface waters and sediments are accumulated by aquatic organisms and bioaccumulate through the food chain by factors of hundreds to thousands. Individuals (like recreational and subsistence fishers) may thus be exposed to large amounts of dioxins and furans by the consumption of sea food.

Dioxins and furans are absorbed through the gastrointestinal tract, respiratory tract and skin and distributed throughout the body. Animal studies show that oral exposure to dioxins causes body weight changes, neurological, reproductive and developmental effects. Dermal contact of dioxins and furans in humans has resulted in acne-like disorder called chloracne. Liver damage, alterations in the metabolism and hormonal levels are other effects documented in humans due to high dosage exposure. At low exposure levels dioxins are known to affect development of the fetus and infants. In particular, kidney defects, weakened immune response, reproductive damage were observed. 2, 3, 7, 8 TCDD is a human carcinogen and exposure to 2, 3, 7, 8 TCDD increases the risks of several types of cancer.

#### 9.11 PCBs

Polychlorinated biphenyls (PCBs) are a mixture of individual chlorinated compounds. PCBs are no longer manufactured but are still released to the environment. PCBs accumulate in small organisms and fish in water and reach levels much higher than in water.

Large dose exposures to PCBs are known to cause skin conditions and liver damage. Animal studies on ingestion of PCB indicate a variety of health effects like anemia, acnelike skin conditions, liver, stomach and thyroid gland injuries, changes in immune system and impaired reproduction. Liver and biliary tract cancers have been associated with PCB exposure. Abnormal responses in infant behavior like decrease in short-term memory and motor skills were noted in babies born to women who ate PCB-contaminated fish.

#### 10.0 CONCLUSIONS

Following are the conclusions based on the above preliminary screening level risk analysis.

1. The soil, groundwater, surface water and sediment impacts have not been adequately defined. Additional investigation is necessary. Additional samples of various environmental media collected at the site must be evaluated for a full list of chemicals consistent with the range of historic activities and hazardous chemicals stored on site.

- 2. It appears, based on a review of recent pictures of the site that several sources of chemicals exist on site. These include but are not limited to engine parts, railroad ties, railroad round table, above groundwater storage tank, and soil. These potential sources need to be characterized, removed, and disposed of in an environmentally safe manner.
- 3. Groundwater concentrations of several chemicals exceed the MCLs and/or the PRGs. Exposure to these chemicals at levels above these target levels may present a substantial endangerment to human health. Hence the groundwater should be remediated and/or adequately managed.
- 4. The concentrations of several chemicals in soil exceed the PRGs or CHHSLs. Exposure to these chemicals at levels above these target levels may present a substantial endangerment to human health. Hence soil exposure to these toxic chemicals must be controlled or eliminated.
- 5. Groundwater at the site is adjacent to and hydraulically connected to the Humboldt Bay where considerable recreational and commercial fishing occurs. Several of the chemicals identified on site in soil, groundwater and sediments bio accumulate and bioconcentrate in marine and terrestrial organisms potentially consumed by humans. Thus the site is an on-going source of chemicals to the Bay.
- 6. Upon complete and through characterization of the residual chemicals and sources a detailed risk assessment must be conducted. The results should be used to identify risk management alternatives to manage the human, ecological and environmental impacts. Thus it is necessary to eliminate the migration of chemicals from the site to the Bay. If this pathway is not eliminated the site will continue to be an on-going threat to the Bay and contribute to its environmental deterioration.
- 7. Considering that the fish, oysters and crabs in the Bay are consumed by humans, the site related chemicals bioaccumulate, and that site related chemicals are migrating to Clark Slough and Humboldt Bay, the site may present a substantial endangerment to human health.

**Table 1. Summary of Exposure Pathways** 

<b>Current Conditions: On-site</b>	Future Conditions: On-site	Current and Future Conditions: Off-site
Trespasser	<b>Construction Worker</b>	Trespasser, Resident, and Visitor
<ul> <li>Ingestion of surficial soil, outdoor inhalation of particulates with absorbed chemicals,</li> <li>Outdoor inhalation of vapors emitted from soil,</li> <li>Outdoor inhalation of vapors emitted from groundwater,</li> <li>Dermal contact with sediments,</li> <li>Dermal contact with surface water, and</li> <li>Dermal contact with soil.</li> </ul>	<ul> <li>Accidental ingestion of soil,</li> <li>Accidental ingestion of water,</li> <li>Dermal contact with soil,</li> <li>Dermal contact with sediments,</li> <li>Dermal contact with surface water,</li> <li>Dermal contact with groundwater, and</li> <li>Outdoor Inhalation of vapors and particulates.</li> <li>Resident/Commercial Worker</li> <li>Dermal contact with soil,</li> <li>Dermal contact with water,</li> <li>Outdoor inhalation of particulates from soil,</li> <li>Outdoor inhalation of vapors from soil,</li> <li>Indoor inhalation of vapors from groundwater,</li> <li>Ingestion of produce that may bioaccumulate chemicals, from soil and groundwater, and</li> <li>Ingestion of fish, oysters, and other organisms from the Bay that may bioaccumulate chemicals from surface water and sediments.</li> </ul>	<ul> <li>Ingestion of seafood from the Bay,</li> <li>Dermal contact with surface water,</li> <li>Dermal contact with sediments, and</li> <li>Inhalation of vapors from groundwater.</li> </ul>

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#### TABLE 2-a Soil Historic Analytical Results for 1988 Humboldt Baykeener

		ı						Humboldt	Баукеереі	METALS							
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Sample ID	Date	Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenu m	Nickel	Silver	Vanadium	Zinc
Pl	RG - Resident	ial	31	0.39	5400	150	37	210	900	3100	400	23	390	1600	390	78	23000
P	RG - Industri	al	410	1.6	67000	1900	450	450	1900	41000	800	310	5100	20000	5100	1000	100000
CH	HSL - Resider	ntial	30	0.07	5200	150	1.7	17 1	660	3000	150	18	380	1600	380	530	23000
CH	IHSL - Indust	rial	380	0.24	63000	1700	7.5	37 1	3200	38000	3500	180	4800	16000	4800	6700	100000
EU-A	8/17/1988	?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EU-B1	8/17/1988	?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EU-B2	8/17/1988	?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EU-BS	8/17/1988	?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EU-C	8/17/1988	?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EU-CS	8/17/1988	?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
817-1	8/17/1988	0.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
817-10	8/17/1988	0.42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
817-11	8/17/1988	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
817-2	8/17/1988	1.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
817-3	8/17/1988	0.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
817-4	8/17/1988	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
817-4	8/17/1988	1.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
817-5	8/17/1988	0.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
817-6	8/17/1988	0.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
817-7 817-7	8/17/1988	0.42 1.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
817-7	8/17/1988 8/17/1988	0.42	-	-	-	-	-	-	-	-	-	-	-		-	-	-
817-8	8/17/1988	0.42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PL-10	8/17/1988	0.42	-	-	-	-	-	-	-	-	40.8	-	-	-	-	-	-
PL-10	8/17/1988	0.4	0.15	21.9	111	ND	ND	40.3	11.3	121	40.6	ND	ND	58.9	ND	39.8	163
PL-10	8/17/1988	0.65	0.13	7.02	57.6	ND	ND	14.5	4.03	7.62	15.2	ND	ND ND	19	ND ND	ND	24.7
PL-2	8/17/1988	0.3	-	7.02	-	-	-	-	-	-	54.2	- ND	- ND	-	-	-	-
PL-2	8/17/1988	1.25	0.27	0.41	17.5	ND	ND	31	6.5	19.2	34.2	ND	ND	40.1	ND	ND	73.2
PL-3	8/17/1988	0.3	- 0.27	-	-	-	-	-	-	-	75	-	-	-	-	-	-
PL-3	8/17/1988	0.66	ND	30.6	56.1	ND	ND	29	8.42	29.7	-	ND	ND	44	ND	32.3	112
PL-5	8/17/1988	0.75	0.24	12.8	99.6	ND	ND	35.7	10.3	37.1	_	ND	ND	45.8	ND	38.8	155
PL-5	8/17/1988	0.8	-	-	-	-	-	-	-	-	192	-	-	-	-	-	-
PL-6	8/17/1988	0.4	-	_	-	-	-	-	-	-	48.6	-	-	-	-	-	-
PL-6	8/17/1988	0.75	0.15	15.6	92.4	ND	ND	41.1	10	25.6	-	ND	ND	55.5	ND	31.4	72.6
PL-9	8/17/1988	0.4	-	-	-	-	-	-	-	-	31.6	-	-	-	-	-	-
PL-9	8/17/1988	0.75	0.19	8.86	102	ND	ND	32.9	9.1	22	-	ND	ND	48.14	ND	ND	77.4
Maxu	mum Detected	Value	0.27	30.6	111	NA	NA	41.1	11.3	121	192	NA	NA	58.9	NA	39.8	163
	ed Residential		N	Yes	N	-	-	N	N	N	N	-	-	N	-	N	N
Exce	ed Industrial	PRG	N	Yes	N	-	-	N	N	N	N	-	-	N	-	N	N
Exceed	Residential C	CHHSL	N	Yes	N	-	-	Yes	N	N	Yes	-	-	N	-	N	N
Excee	d Industrial C	HHSL	N	Yes	N	-	-	Yes	N	N	N	-	-	N	-	N	N
			All units in n	_					-								

All units in mg/kg

PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004

CHHSL - California Human Health Screening Levels, January 2005

1- Hexavalent Chromium Values used

ND - Not Detected

` - Not analyzed

#### TABLE 2-a Soil Historic Analytical Results for 1988 Humboldt Baykeeper

						Monogr	omatic Hydro	abolat Bayke	ерег	1		Polymuoloor	Aromatic Hy	drocarbons		
			I			Monoai	omane Hydro				I		Ĭ	ui ocai bolis	1	
Sample ID	Date	Depth (ft)	TPHd/mo	TPHg	Xylenes	Benzene	Toluene	Ethyl benzene	Oil and Grease	Tetrachloro ethene	Napthalene	Acenaphthyl ene	Acenaphthen e	Fluorene	Phenanthren e	Anthracene
PI	RG - Residenti	ial	na	na	270	0.64	520	400	na	0.48	56	na	3700	2700	na	22000
P	RG - Industri	al	na	na	420	1.4	520	400	na	1.3	190	na	29000	26000	na	1000000
CH	HSL - Resider	ntial	na	na	na	na	na	na	na	na	na	na	na	na	na	na
CH	IHSL - Indust	rial	na	na	na	na	na	na	na	na	na	na	na	na	na	na
EU-A	8/17/1988	?	-	-	ND	ND	ND	-		-	ND	ND	ND	ND	ND	ND
EU-B1	8/17/1988	?	ND	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND	0.02	ND
EU-B2	8/17/1988	?	ND	ND	ND	ND	ND	-	-	-	ND	ND	ND	ND	ND	ND
EU-BS	8/17/1988	?	ND	ND	ND	ND	ND	-	-	-	ND	0.27	ND	ND	ND	ND
EU-C	8/17/1988	?	-	-	ND	ND	ND	-	-	-	ND	ND	ND	ND	ND	ND
EU-CS	8/17/1988	?	-	-	ND	ND	ND	-	-	-	0.073	ND	ND	ND	ND	ND
817-1	8/17/1988	0.33	-	-	ND	-	ND	ND	115	-	-	-	-	-	-	-
817-10	8/17/1988	0.42	-	-	ND	-	ND	ND	175	-	-	-	-	-	ND	-
817-11	8/17/1988	0.50	-	-	ND	-	ND	ND	2940	-	-	-	-	-	ND	-
817-2	8/17/1988	1.25	-	-	ND	-	ND	ND	285	-	-	-	-	-	ND	-
817-3	8/17/1988	0.67	-	-	ND	-	ND	ND	2785	-	-	-	-	-	-	-
817-4	8/17/1988	0.50	-	-	ND	-	ND	ND	39110	-	-	-	-	-	-	-
817-4	8/17/1988	1.25	-	-	ND	-	ND	ND	59210	-	-	-	-	-	-	-
817-5	8/17/1988	0.75	-	-	ND	-	ND	ND	8600	-	-	-	-	-	ND	-
817-6	8/17/1988	0.75	-	210	ND	-	ND	ND	4575	-	-	-	-	-	-	-
817-7	8/17/1988	0.42	-	-	ND	-	ND	ND	260	-	-	-	-	-	-	-
817-7	8/17/1988	1.25	-	-	ND	-	ND	ND	6735	-	-	-	-	-	-	-
817-8	8/17/1988	0.42	-	6500	ND	-	ND	ND	6250	-	-	-	-	-	-	-
817-9	8/17/1988	0.42	-	-	ND	-	ND	ND	135	-	-	-	-	-	ND	-
PL-10	8/17/1988	0.4	-	-		-	-	-	-	-	-	-	-	-	-	-
PL-10	8/17/1988	0.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PL-11 PL-2	8/17/1988 8/17/1988	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	- ND	- ND	- 0.0000	- 0.0011	-	- ND	-	-	-	-	-	
PL-2 PL-3	8/17/1988 8/17/1988	1.25 0.3	-	-	ND	ND	0.0009	0.0011	-	ND	-	-	-	-	-	
PL-3 PL-3	8/17/1988	0.66	-		-	-	-	-	-	-	-	-	-		-	-
PL-5	8/17/1988	0.00	-	-	0.01	ND	0.0007	0.003	-	- ND	-	-	-	-	-	-
PL-5 PL-5	8/17/1988	0.75	-	-	- 0.01	ND -	-	-	-	ND -	-	-	-		-	-
PL-5	8/17/1988	0.8	-	-	-	-	-	-		-	-	-	-		-	-
PL-6	8/17/1988	0.4	-	-	-	-	-	-		-	0.085	0.037	0.009	0.008	0.22	ND
PL-9	8/17/1988	0.73	-	-	-	-	-	-	-	-	0.083	0.037	0.009	0.008	0.22	ND -
PL-9	8/17/1988	0.4	-	-	-		-	-		-	-	-	-		-	-
	num Detected		NA	6500	0.01	NA	0.0009	0.003	59210	NA	0.085	0.27	0.009	0.008	0.22	NA
	ed Residential		TVA.	-	N	-	N	N	3/210	11/A	N	-	N	N	-	IVA.
	ed Industrial	_	-	-	N	-	N	N	-	_	N	-	N	N	_	-
	Residential C		_	-	-	-	-	-	-	_	-	-	-		_	
	d Industrial C		-	-	-	-	-		-	_		-	-		_	-
LACCO	usurud C		A 11		_								-			

All units in mg/kg

PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004

CHHSL - California Human Health Screening Levels, January 2005

1- Hexavalent Chromium Values used

ND - Not Detected

` - Not analyzed

#### TABLE 2-a Soil Historic Analytical Results for 1988 Humboldt Baykeener

		I	<b>+</b>		Hun	nboldt Bayko	_	atic Hydrocar	L			
						Poly		·			1	
Sample ID	Date	Depth (ft)	Fluoranthen e	Pyrene	Benzo(a) anthracene	Chrysene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Benzo(a) pyrene	Benzo(g,h,i) perylene	indeno(1.2,3- cd) pyrene	2-methyl naphthalene
PI	RG - Resident	ial	2300	na	0.62	62	0.62	6.2	0.062	na	0.62	na
P	RG - Industri	al	22000	na	2,1	210	2.1	21	0.21	na	2.1	na
CH	HSL - Resider	ntial	na	na	na	na	na	na	0.038	na	na	na
	HSL - Indust		na	na	na	na	na	na	0.13	na	na	na
EU-A	8/17/1988	?	ND	ND	ND	ND	ND	ND	ND	0.026	ND	-
EU-B1	8/17/1988	?	ND	0.043	ND	ND	ND	ND	ND	ND	ND	-
EU-B2	8/17/1988	?	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
EU-BS	8/17/1988	?	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
EU-C	8/17/1988	?	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
EU-CS	8/17/1988	?	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
817-1	8/17/1988	0.33	-	-	-	-	-	-	-	-	-	-
817-10	8/17/1988	0.42	ND	ND	ND	ND	ND	-	ND	-	-	-
817-11	8/17/1988	0.50	ND	ND	ND	ND	ND	-	ND	-	-	-
817-2	8/17/1988	1.25	ND	ND	ND	ND	ND	-	ND	-	-	-
817-3	8/17/1988	0.67	-	-	-	-	-	-	-	-	-	-
817-4	8/17/1988	0.50	-	-	-	-	-	-	-	-	-	-
817-4	8/17/1988	1.25	-	-	-	-	-	-	-	-	-	-
817-5	8/17/1988	0.75	ND	ND	ND	ND	ND	-	ND	-	-	-
817-6	8/17/1988	0.75	-	-	-	-	-	-	-	-	-	-
817-7	8/17/1988	0.42	-	-	-	-	-	-	-	-	-	-
817-7	8/17/1988	1.25	-	-	-	-	-	-	-	-	-	-
817-8	8/17/1988	0.42	-		-	-	-	-	-	-	-	-
817-9	8/17/1988	0.42	ND	ND	ND	ND	ND	-	ND	-	-	-
PL-10	8/17/1988	0.4	-	-	-	-	-	-	-	-	-	-
PL-10	8/17/1988	0.83	-	-	-	-	-	-	-	-	-	-
PL-11	8/17/1988	0.5	-	-	-	-	-	-	-	-	-	-
PL-2	8/17/1988	0.3	-	-	-	-	-	-	-	-	-	-
PL-2	8/17/1988	1.25	-	-	-	-	-	-	-	-	-	-
PL-3	8/17/1988	0.3	-	-	-	-	-	-	-	-	-	-
PL-3	8/17/1988	0.66	-	-	-	-	-	-	-	-	-	-
PL-5	8/17/1988	0.75	-	-	-	-	-	-	-	-	-	-
PL-5	8/17/1988	0.8	-	-	-	-	-	-	-	-	-	-
PL-6	8/17/1988	0.4	- 0.277	- 0.227	- 0.021	- 0.052	- 0.070	- 0.016	- 0.017	- 0.020	- 0.014	- 42
PL-6	8/17/1988	0.75	0.277	0.227	0.021	0.053	0.078	0.016	0.017	0.028	0.014	43
PL-9	8/17/1988	0.4	-	-	-	-	-	-	-	-	-	-
PL-9	8/17/1988	0.75	- 0.227	- 0.227	- 0.021	- 0.052	- 0.070	- 0.016	- 0.017	- 0.020	- 0.014	- 42
	num Detected		0.277	0.227	0.021	0.053	0.078	0.016	0.017	0.028	0.014	43
	ed Residential ed Industrial		N N	-	N N	N N	N N	N N	N N	-	N N	-
				-					N N	-	1	-
	l Residential C d Industrial C		-	-	-	•	-	-	N N	-	-	-
Exceed	u maustrial C	nnst	-	-	-	-	-		IN	-	-	

All units in mg/kg

PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004.

CHHSL - California Human Health Screening Levels, January 2005

1- Hexavalent Chromium Values used

ND - Not Detected

` - Not analyzed

TABLE 2-b Soil Historic Analytical Results for 1990 Humboldt Baykeeper

	Zine	23000	0000	23000	0000	0 7.0	/		9	28.9	20.6	36,7	24.2	,		,					•			4		:		1		,	r			•									,			•	•	•							:				•					. (	
	Vanadlum	78	$\dagger$	+	+	1	<u> </u>	+		-	_	2.7	20.6			<u> </u>				•	-	1		•		.:		-				•	-	•	-									•	,	,	•	•	•	:	); (				· ·				•	1;		•		1	
	Silver	390	5100	ORF C	nio+	2	2 5	2 5	ON!	Q.	Q.	<del>Q</del>	Ş		•					Ī		-		•		:		-	•	,	,	,	-	•	-					<u> </u>		•	,	•	'	,	1	,	•		1				,		•		•	•	•	-	, ,	Ī	
	Nickel	1600	20000	1600	THOUS .	4   I	127.0	er.	34.5	29.1	30.1	37.1	35.7	•		,					•	1		,	•	•			•	•			-	•		•		,		-	•	,	,	•	'	,		1	•		•			•		•	•	•	,		•	•		1	
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	Mercury	13	310	2 5		2 !	2 5	2 2	2	Q	S	2	2	•		,				•			•	•	•	•		,	•	•		•		•	•	•		•						•	1	1.	•		•					•			ı	١.	1	1	•	-	) 		,
	Fear	007	DON S	151	nace -	1 5	3.0		3	11.6	3.2	4.2	-		,					•		': ':	•	•		•		,	-	,	•	•		•		•							•	•	•	•	•	•		•					. ,		٠		•	•	•		,	-	
7	Cupper	3100	41000	Hand	10000	t Dt	7 9		7	15	5.6	15.7	5.8			•	:				,	;	•		,			,	-	•	1.		,					:		,			,	t		,	,								,	,	,	,	1	,	.:	,	· · ·		
		900	006	9300	3200	0.0	3.5	7 2	2.0	9.9	5.7	20.6	5.7		. •				:		·:		•			•		,		•		4		•				•		•			•	•	•		•		•			, ,					•		٠		•		• • •	_	
	Chramium	210	Ç.	12.5	٦		17.4	7.5	7	R.	7.72	36	35.1	: :								•					,						•					•		•			,			•	,	• • • • • • • • • • • • • • • • • • • •							•				٠						-
	Cadmium	7.	7	1.7		9 9	2 5	2 5	Q !	2	£	2	9				,	:			•	-	•	1	-		•	٠	•	-			•	1.	•	,						,			٠.	•	•	•	-	•			' '		,	. ,	,	,	•	,		,			
	Beryllum	150	D 5	ISI GOLA		9	2 2	-	2	0.27	Q.	0.65	Z			,	!		ľ		•		•	•			•			•		•		1	•	,			•		,	•		,	1	•		-	•	,	, ,	, ,		,			•	,	•	•.			, ,		
	Barium	2400	67000	37111	7 20	11:	100	2		57.2	52	82.6	15.7			•							•	•	•	4	ŧ	•	•					•	•	•			•	1	•	•		•!	•	•		-	1	•	•						•		•	•		•		1	-
	Arsenic	0.39	9 2	0.00	1	<u>ין</u> נ	15	1 -	2	8.6	6.	5	뒤		٠		'	-				1		•		•	-	•	٠	•		•		•	.!	•					•	٠	•	•		•	4		•			_				•	•	•			•	-			
	Antimony	E,	410	0 F		9	2 2		2	2	2	운	2		•		,							•	• !	•	•	•		•	.!	•	• .		-						•	1	1	•		-	1		•	•	-				  -  -	•	1	.!	,	•	•	•	· ·		•
	Depth (m)	ital:	rial ratio	chillan drin1			, r			2					3.5	<u> </u>	<u> </u>	!			3 -	<u> </u>	1	4 4	1	3	n :	2	Ţ.	1	n		<u>.</u>	1	<u> </u>	- 4	L	rı		:	C)	_		7		-	<u>""</u>	-n -		-	2 -	:	1	6-1	:	***		25	į		:	į		1	
	F	PRG - Residential	FRG - Indust	HHSL - India	7/11/t Don	т.	7/31/1990	Т	-			_		_	<u> </u>	_	1	3	<u>i </u>	<u> </u>	<u> </u>	+		0.017179		0.65	_	8/1/1990	- 1	- 1		066/1/8	_	- 1	_	İ	i	<u> </u>	<u> </u>			0661/1/8		_	-	8/1/1990		0661/1/8	_	0001/12			1	<u>i                                     </u>		:		0661/1/8	8/1/1990	8/1/1990	8/1/1990	0661/1/8	0661/1/8		000 /1/X
	Sample ID		٤		112 211	T10 501	TIEST	1000	10.00	13W-525	13W-S26	BCS-MCL	PES-WET	T15-S1	TIE-S2	T1E-53	TIEST	TIESS	T1 W.53	TIWGG	T1 W.C6	111	100	- M-1	1,553	00.00	126-59	7.W-5.12	12W-513	**************************************	12W-515	5 X-X-2	12.W-5.U	2	75-251		17.F.S	13 W-S22	T3W-525	T3W-S26	MCS-WCL	628-WEL	T3W-S30	ES-WCL	TJW-S34	T3W-535	S-WC	J.W-5.39	14A-5	T.1A CS	144.5	T.B.5	T48-52	T4B-57	T4B-SR	T4D-S1	T4D-52	T4D-S7	7.05.88	15.51	15.57	25.5	T5-516		7

TABLE 2-b Soll Historic Analytical Results for 1990 Humboldt Baykeeper

	Date  PRG - Redilential PRG - Industrial CHISSL - Rediential CHISSL - Industrial	Depth (ft)	Antimony	Arsenic	Berium	ВегуШит	Cadmium	Chromium	Cobalt	Copper	Ę	Mercury	Malybdenu	Nickel	Silver	Vanadium	Zinc
PRG CHIII 17-525 The State of t	- Residentia - Industria IL - Resident		15	_								٠.	=			_	
CHIIIS CHIIIS TI-5:33 TI-5:30 TI-5:30 TI-5:31 TI-5:31 TI-6:31	Industrial L - Resident		711	0.39	5400	150	37	210	900	3100	400	13	390	1600	390	78	23000
CHIIS T1-523 T6-53 T6-53 T6-510 T7-52 T7-52 T7-52 T7-52 T7-52 T7-52 T7-52 T7-53	L - Resident			1.6	67000	0061	450	450	1900	41000	800	310	5100	20000	5100	1000	100000
CERTITION CONTRIBUTION CONTRIBU	of a language	<u></u>	30	0.07	5200	150	1.7	1.2.1	660	3000	150	18	380	1600	380	530	23000
1 2 1 1 1		[2]	380	024	63000	1700	7.5	37.1	3200	38000	3500	180	4800	16000	4800	6700	100000
	0661/1/8	5	•	-	1		•	1		1		<u> </u>	•	-	٠	٠	
	8/1/1990	~;	•			1		.:	•	•	•				•		
	06617179	4 6				•		,					•	•		•	*
	066717	3	•	•				-		•	1,		Charles and the state of the st	•	,	,	,
1:1:1	0661/1/8	5.		•		•		)			•	•		•	•		,
: 1	0/1/1/000	n c		•				1	•			-	-				
1	R/11990	3 9	,			1. 1			•	•	•	•	-	•	,		-
	R/1/1990	3.5											•	•	•		
	B/1/1990	3.8		,			•	,							٠		
- C- C- F	8/1/1990	5,5		٠	,	٠	٠	•	•				•				•
1	8/1/1990	C1	ı	•											1	,	
12.52	8/1/1990	m	1	•	•	•;		1			•	•	-			•	
╁	041/170	7 0					•	•,				-	•	•	•	•	,
17.37	00011170	7 -		1			•	,		·:					•		
$\frac{\perp}{1}$	8/1/1000	5.3	-	, .							•	•	1				
10-51	8/1/1990	1.5	,		•				•				•	•	•		
<u>.</u>	8/1/1990	55						,						•	•	***************************************	•
_	0661/1/8	iri		,	1		. •	: ,			-	<u> </u>		,	,		,
T10-54	8/1/1990	3.5	-			٠	,	,	,	,							
- ;	8/1/1990	2	-		,			•	•	•		•	1	•	•	•	
4	8/1/1990	3.5	•	· i	•			,	•		٠.		1.	٠	1;	•	•
THE-56	8/1/1990	C1 ;	1	•	•	• !	,	1	1.		•	•	•	•	•	•	
$^{+}$	0.641/1/9	<u>.</u>	,	•		•	•	•,	,		•	-		•	•	•	
T11W-53	8/1/1960	7 *	•	•	-		-	C C		•	•	•	•	,	•	42	
1	8/1/1940	1.51	5	17	68.6	17.0	: 5	, ;;	×	. 5	- 6 -	Ş	Ş	, 54,	· K	2 75	14 0
T1W-S06	0661/8/8	47	Q	=		Ę	Ş	9.6	77	6.5	C	9	Ş	13.2	2	12.7	10.1
T3E-50!	8/3/1990	1.5	DZ.	2.9	20.6	2	Š	<del>-</del>	9.9	£1	12.7	æ	QX	38.3	Q.	2.15	80.1
	0661/178	-1	2	2.6	12.7	Ð	2 Z	£1,	5.3	9,3	7	£	Q.	30.8	Q	17.6	23.6
136-507	8/3/1990	2.5	2	4.9	87.5	2	2	- F	9.9	10.6	5	9	2		9	74.7	29.1
1.32-508	0.47778	4 6	2 5	٦.	2	Z	2 5	2 - S	6.4	5 1	ři.	2 9	2	31.2	2	17.2	21.5
15-502	0661/6/8	15	2 2	1 2	7 F	3 5	2 2	- 5	 	4.7	-	2 5	2 2	15.1	Ę	7 5	77.6
	8/3/1990	_	딮	rı	77.4	0.2	S	39.8	5.8	10.1	2.7	£	Q	35.32	£	77.4	243
15-511	0661/12/8	7	딮	딘	13.5	S	ŭ	34.9	s	6.2	7:1	Ð	CZ.	F-10	Q	8.71	28.8
T5-S24	8/3/1990	3.5	2	<u>.</u>	98.6	Ö	2	56.7	8.7	21.7	3.7	2	2	38.6	Q S	41.3	43.9
T7E-501	0/3/1990	2	2 5	7 05	198		2 5	÷ 5	2.5	15	1 2	2 5	2	C - 19	2 2	2,53	25.0
T7E-S02	8/8/1990	3.5	2	10.8	661	0.15	0.58	3 5	1.01	134	711	S	CZ	52.6	S	7.17	E
	9/8/1990	2.5	S	3.5	22	£	요	92	4,9	259	374	91.0	QN	49.7	Q	34.4	160
T7W-S02	8/8/1990	3.8	2	1,4	59.6	6.3	Q.	55.1	5.2	15.7	3.7	8	Q.	38.1	Q	41.5	36.9
T7W-S03	0661/8/8	5.5	•						,	,	,		,			•	1
Maxum	Maxumum Defected Value	Value	V.	13.2	661	0.44	95.0	71.9	20.6	259	37.	0.16	2.1	61.1	VΑ	67.7	160
Erceel	Exceed Resillential PRG	THC.	-	Ye	z	z i	z	z	z	z	z			z	-	z	z
E1	E-mail 19-14-11-1 Cittle	Hit	1	20 %	2		2 2	2 3	٤ :	2 2	2		,	2 3	,	2 2	z
Exceed 1	Exceed Industrial CHIISL	HISL	-	o y	z	z	z	Yes	z	z	2			z		. z	. z

All units in mykg
PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004.
CHHSL - Caffornia Human Health Screening Levels, January 2005
Levenvlent Chromium Values used
ND - Not Detected
- Not Detected

TABLE 2-b Soll Historic Analytical Results for 1990 Humboldt Baykeeper

Part							Моновги	matic Hydroc	carbons				Polynuclea	r Aromatic Hy	drocarbons		
March   Marc	Sample 10		Depth (ft)	TPHd/ma	TPHg	Xylenes	Benzene	Taluene	Ethyl benzene	Oil and Grease	Tetrachloro ethene		Acenaphthyl ene		Fluorene	Plenanthren	Anthracene
17   17   17   17   17   17   17   17		RG - Residents	<u></u>	8	g	270	0.64	520	400	па	0.48	356	un	3700	2700	EU	22000
1   1   1   1   1   1   1   1   1   1		PRG - Industri		E	E E	750	1.1	520	타	Ba	13	190	813	29000	26000	22	100000
17   18   18   18   18   18   18   18	٦	HHSL - Mesider	100	2	E .	E 1	E :	E E	8 2	E :	nu .	2 :	eu !	=======================================	= :	2 :	2
17/19/99   2.5	T1E-501	7/31/1990	1.5			87	12	ND ON	E S		E Z		9 ,		E .	g .	100
Thirtings   Thir	T1E-S02	7/31/1990	3.5	,		Q	2	문	Ð	•	QX	•		,			
1711/1999   13.3   1.5	116-5	7/31/1990	CI		•	물	Z	Z	₽	•	Q	•	•		•		•
1711/1999	116.50	0661/15/2	27.	-		물;	물:	운:	₽:	•	2		•	•			
100   100	T3W-S26		<u>1</u>			2 2	2 2	# Q	1 2	•	2 2			•	• •	• •	
Milloyer   1	TJW-SZ8	<del></del>	. (1		•	97.0	2	560,0	£		Q		•			'	
Strings	T3W-S29	-	-4	,		Q	2	2	QN	•	S	,			-		,
Mail	TIS-SI		1.5	•	,	S	2	2	2	•	ΣĐ	•		•	•	•	,
Strings   Stri	T1E-S2		3,5	10000	£	무	2	Z	0.71	7300	짚					,	•
Strings   1.5   Strings   1.	TIE-S3	<u>.</u>	2	2	Q.	2	2	2	Q:	2	2	•	•	•	1	•	
17.10   17.1	7-11-14	+	2	2 5	2	2	2	2	œ.	2 9	QN	-		•	•	•	•
No. 10   N	T1W.51	+	n 4	2 2	2 5		•	• •		2 5		•	•			,	
Stringgg	TIW-S5		51	2	£	Z.	Q.	2	S	2	Q.	•		•	: : :	•	
No. 1969   1.5   No. 1960   No.	TIW-S6		~4	2	£	S	2	CZ	CN	£	QV					ı	
Strings	T1E-S9		2.5	Q		DZ.	Ŋ	<del>Q</del>	2	Q		  - 		  - 		,	
Stringson   13   15   ND   ND   ND   ND   ND   ND   ND   N	T1W-S10		**	ON.	•	Q	2	₽	2	Ð		•	•	•	•		•
Stiffying   15   ND   ND   ND   ND   ND   ND   ND   N	TTE-S7	-	3.5	52	Q!	,	•	,	,.	0099	1	-	ı	•			•
Strings	200	-	2 -	2 5	2 5		•		*	2 5		1	1	, i		•	1
Stition   Stit	T2W-S12		, [	S	Ę	. ,	. ,			25		, ,				•	
Strings   1.5   No.	CIS-WL		<u> </u>	2	2	,	•	,	,	2				•			
Stringson   1	TIW-S14		1.5	QV	£	-				2	,		:				
Strings	SIS-WET	-	n	2	2		•			윤	,				•		•
No. 17.00   No.	W-SIP	-	2	Q E	2					338	•	•		,		'	
Stringger   1	T3E-S1	<u>:</u>		nya,	,	· R	· 2	. ⊋	£	0007-	2	•				• • •	
Strings	17E-51	<u> </u>		ON	Š	S	2	문	2	D.	2					•	
No. 10   N	13E-S6		4	2	2	2	2	문	모	Q	•	•	•	•		•	
No. 1, 1990   1.5   N.D	138.58		7 -	2 2	2 2	S S	2 2	2 5	2 2	2 5	2 5			•		•	
No. 15   N	T3W-522	<u> </u>	- 61	2	물		} •	<u> </u>	· ·	ñ	¥	,		,			
No.    73W-S25	_ !	1.5	•	2	12	1.7	F.	7		2	•	•	٠		1		
Strings	92S-WCL	-:	7 1	2	2	2	2	물 :	2	0,0	2	, '	1.	,.	•	1	11
No.    SES-WEI	<u> </u>	F1 =	2 5	2 5	9 5	2 5	2 5	<del>2</del> 9	2 9	2	•	•	•	•	•		
Stringger   1	OLS-WELL	_	-	2 2	2 5	Ž ,	<u> </u>	<u>.</u>	2 ,	2 5	r			,	• • •		
Strings	ICS-MCL	1 :	7	00061	2			•	•	0089					•		
No. 1	T3W-534	_	٠,	\$	물 :			•	,	2		٠	,		•:	•	
N	CO-WC	1	4	2 4	2 2	•	•	•		2.5		:			•	•	
No.    13W-S39	-		2 2	2 2			•	Ş	2 2			. .		. .			
No.    T4A-51		-	Q	•	ON	2	2	Ę	Ω	,							
No.    T4A-52	8/1/1990	2	2		R	2	2	<del>2</del>	문	,			•		•	•	
String   S	T4A-55	0661/1/8	<u>n</u> -	2 5		2 2	2 2	2 5	2 5	20 2		•					•
No.    T4B-SI	8/1/1990	2.5	2		S	2	2	2	2	٠,				٠.	•	•	
SI   11990	T4B-S2	8/1/1990	7	2		2	2	2	2	문		•		•	•		•
SI/1990   3	T4B-5/	8/1/1990	-1 -7	2 5	•	2 2	2 2	2 5	2 5	Z 25	:		1; 1				٠. (
SI   SI   SI   SI   SI   SI   SI   SI	T4D-51	8/1/1990		2		S	Z	Z	£	200				,			
SI/1990   2.5   ND	T4D-S2	8/1/1990	r.	æ		S	물	Z	£	£	Q	•	1		•		
NO	T4D-57	0661/1/B	<u>ئا</u> .	£		2	2	물	문	Q	S	•	•	•		•	·
N	140-58	0661/1/8	7 .	2 5	•	2 2	2 2	2 2	2 2	2 5	2 5	•	•	•	•	•	•
N	15-52	8/1/1990	) X	2		2 2	2	2 2	2 2	2 2	2 2				. -		
ND	T5-510	0661/1/B	-	£		욷	2	£	S	2	딮		•	,			•
N	15-51	0661/1/8		2	•	2 5	25	2 9	2 9	2 9	2	•	•	•	•	,:	
8/1/1990 3.5 ND ND ND ND ND ND	15-517	8/1/1990	5.5	2 2		2 2	2 2	2 2	2 2	2 5				, ,		•	•
	T5-S24	8/1/1990	3.5	Q		Q	QN	S	Q.	UN	ND			,			

TABLE 2-b Soil Historic Analytical Results for 1990 Humboldt Baykeeper

				Monnan	Contraction I was true	arlone				Patricles	r Aromatic Hy	or the contract of		
Date Denth (R)						Fehral	2	Tatrachlom		A naphthad	According		Dhananthan	
	TPHd/mo	TPIIL	Xylenes	Benzene	Tolucue	henzene	Greate	ethene	Napthalene	cure cue		Huorene		Anthracene
PRG - Residential	Ē	10	270	0.64	520	907	na	0.48	56	Ħ	3700	2700	nu	22000
PRG - Industrial	g g	пп	420	1.1	520	QQ.	2	1.3	190	80	29000	26000	111	100000
CHRSL - Residential	Ħ	100	na	11	#	Ħ	EH.	ΒU	ПП	<u>=</u>	1	na	ш	10
Chast- Industral	=	퍰	E :	2			¥	HU :	щ	8	8	111	E	10
C 1990	2 5		2	2.5	2 5	2 5	2 5	Z.	•	•	•		1 4	-
	2 2		2 5	2 2	2 5	2 5	2 5	1	•	•				
8/1/1990 2.5	2		2	9	2 5	2 5	91	,   ,						
1	Ş		2	5	2 5	5	2						•	-
8/1/1990 1.5	Z		Ę	5	2 5	2 2	2 5	•				-	•	
1	0.20		Ę	5	<u> </u>	2	6180	5						
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8/1/1990 3.5	2	[   	Q	Ę	S	Ş	5	£	,	,				
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	Z	•	2	g	S	Ş	Ę	Z	•	•			•	•
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K/1/1990	Ş	•	2	2	S	2	Ę			: •				
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8/1/1990 3	S		Z	2	2	2	2	,		! !•	•	. • :	· ·	
8/1/1990 3.5	S		2	£	Z	Ş	£	-		ı	,		,	,
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	g	•	물	GN.	2	윷	Ğ			ı				
8/3/1990 1.5	•	,	2	£	2	S	,	2	٠			. •		
			2	£	2	2	,	2					,	
5.1 0990 1.5	,		2	ND	2	모	,	2					•	
8/3/1990 4			2	2	£	£	,	2	١			٠	٠	,
8/3/1990 2.5	•	•	문	£	Z	귯	•	2	1		-	•	٠	•
8/3/1990 +	•	•	9	2	2	2	•	2	•				•	•
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3.5			2	2	2	2		0,12	•			•		•
8/3/1990	• ;	•	문	Q.	S	2		2				,	-	
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c nss11578		-	Ž	2	2	2		2			• .	•	•	•
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8/8/1990		•	2	2	2	2	•	2	1	1			•	•
2.5 1 0/21/8/8	, ,	١	2;	2	2	2		2	٠		•	٠	١	
Maximum Defected Value	19000	VV.	; ;	<u>:</u>	7.7.	7.	42000	0.12	¥.	¥	V.	ž	¥	ž
Exceed Residential PRG		-	z i	Į,	z ;	z ;	z	z;	•	,	,		•	•
Excentionation FRG	•	<u>.</u>	2	2	z	2	2	2		•	•			
Exceed Regulation CHRISE		•	,		,		,		•	1		,	j	
Exceed Industrial CHIISL				٠	•	•			•	•	•	•	•	

All units in mg/kg
PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004.
CHHSL - California Human Health Seveening Levels, January 2005
1- Hexavalent Chromium Values used
ND - Not Detected
- Not analyzed

TABLE 2-b Soll Historic Analytical Results for 1990 Humboldt Baykeeper

Date Depth	Depth (R)	Fluoranthen	Pyrene	Benzo(a)	Chrysene	Benzo(b)	Rengu(k)		Benzu(g,h,i)	Benzu(g,h,i) indeno(1.2,3-	7-methyl
	Ť					<b>Sucranthene</b>	(Juoranthene	DVFesse		Ed) pyrene	paphthalene
Residential -Industrial -Industrial -Industrial -Ingustrial -Ingus		2300	ŧ	1,63	63	29.0	69	-		29.0	
Reldential   Industrial   1,1990   1,	T	22000	#	2.1	210	2.1	21	0.21	=======================================	7.1	1 2
1106ustrial 1. 11990 3. 11990 3. 11990 1. 11990		8	40	au	113	a 2	uu	0.038	pd	21	na
71990 3. 71990 3. 71990 3. 71990 1. 71990 1.	l	2	E	2	2	EN	FE.	0.13	E	Ē	ğ
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3.00	-				• :	-	-		•		•
9661/1/8	_				,	,		•	•		•
N/1/1490	_								,		
ľ				•	•			•		•	•
8/1/1990 1.	٠,			٠		٠	,	•	1		٠
8/1/1990					,	,	•	٠			
7 ndp1/1/8											
1220	7				•		•	•		•	•
8/1/1990 4	_	,	,			,	•	,	,	,	
3/1/1990					,			· •	•	•	. •
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TABLE 2-b Soil Historic Analytical Results for 1990 Humboldt Baykecper

							Poly	Polynucicar Aromatic Hydrocaritons	atic Hydrocar	hons			
Proc. Insulated   1,000	Sample 1D	Date	Depth (ft)			Benzo(a) anthracene	Chrysene	Benzo(b) Asoranthene	Benzo(k) Auoranthene	Benzo(a)	Benzo(g,b,l) perylene	Indeno(1.2,3.cd) pyrene	
HillSt_Related   1999	Ä	G - Resident		שוורל	1	69.0	5	69 11	. 9	250.0		270	
Millogol   1	T D	G - Industria		מטאננ		1 .			;	7000	:	,	1
High part   High	LHU	151 - Desiden	1441			1		1		111	417	1.7	
BU1990   2   1   1   1   1   1   1   1   1   1		Tel Terferen		2		200		1111		0.030	Ħ		
BIL1990   2   2   2   2   2   2   2   2   2	1	1217 - 71111131	_[	and the same of th	E2	E I	E	100	Πū	1.13	풀	盟	2
WILVISPO   2   WILVISPO   3   WILV	5.2.5	8/1/1990	'n		•	•	•	,		•	٠	•	*
## ## ## ## ## ## ## ## ## ## ## ## ##	T6-53	8/1/1990	r:	,			,	,	,		٠	•	•
BILLI990   2.5	75.52	8/1/1990	-7		•					•	,	,	,
8111990 1.5	6-S3	8/1/1990	2.5			. •	. ,	,	,		•		,
BIL1999   1.5	6.510	R/1/1990											
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BILITORY   L2   BILITORY   L2   BILITORY   L2   BILITORY   L3   BILITORY   L	200	06.111.00	7	P	٠		•		•	•	•	•	,
BITTOPO   1.5	ŝ	8/1/1990	1		•				•	•		•	
WILTINGO   1.3   1.5	7E-S1	8/1/1990	1.6	1			•			,		,	٠
BITT/1990   5.5	76-52	B/1/1990	3.5		•		,	•	•	•		,	
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BILL1990   4.5	76-97	8/1/1/90	7	•	1				,			-	•
BIT1990   1.5	S	8/1/1990	2	•	•	•	,		•		•	,	
BILL1990   1.5	19-52	8/1/1990	4.5				•					,	
BI/1990   1.5	T96-51	8/1/1990	1.6		٠		,						
BI/1990   1.5	5.20	R/1/1990	٧.				,	. '					***************************************
BILL1990   2.5	10.01	001/1/0	4										
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BL/1990   1   1   1   1   1   1   1   1   1	11E-S7	8/1/1990	3.5		•		. •						
BIJ1990   4	1W-53	8/1/1990	-	•			•		•			,	
Biz   1990   1.5	10,50	R/1/1000	-				:					***************************************	
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R2/1990   4	E-S07	8/3/1990	1.5			,	•	1			,	,	
BL/1990   1.5	E-508	8/3/1990	4	•	•	,				•		•	
BZJ1990   3   3   3   3   3   3   3   3   3	5.50	8/3/1990	57	,		,							•
8/3/1990   3   3   3   3   3   3   3   3   3	5.50	8/3/1990	5	٠				. •		•	,		
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B/3/1990   1.5   B/3/1990   5   B/3/1990   5   B/3/1990   1.6   B/3/1990   1.5   B/3/1990   1.5   B/3/1990   1.5   B/3/1990   2.5   B/3/1990	5	R/1/1990	-2								1		,
BAST   1990   5   5   5   5   5   5   5   5   5	5.5	0661/2/3	7.5		•			ı	:	-			-
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BAN   1990   2.5	100 0	0.671.070	9		•		:		•		,	.:	•
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unman Detered Value         NA         NA <th></th> <th>8/8/1/9/0</th> <th>9.7</th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>•</td> <td>1</td> <td>111111</td> <td>.:</td>		8/8/1/9/0	9.7							•	1	111111	.:
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All units in mg/kg.
PRG - Preliminary Remediation Gool, EPA Region 9 PRG Table, October 2004,
CHHSL - California Human Health Screening Levels, January 2005
I - Hearwelen Chromium Values used
ND - Not Detected
- Not Detected

TABLE 2-c Soil Historic Analytical Results for the Year 1992 Bumboldt Baykeeper

					METALS							ME	MUTATE		in the second	
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PRG - Residential	ntial	31	0.39	5400	051	37	210	906	3100	400	23	390	1600	390	78	23000
CHHSL - Resi	lential	2 S	200	2000	300	3	3	9061	41000	900	310	2100	20002	5100	1000	100000
CHHSL - Industrial	utrial	S S	VE O		170	1	1/	900	DOOR	200	gr S	D87	1900	200	3	73000
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TABLE 2-c Soil Historic Analytical Results for the Year 1992 Rumboldt Baykeeper

PRG - Realdential PRG - Industrial PRG - Industrial	Antimony	Arsenic	Berium	Beryllium	Cadmium	Chromium	Cabelt			;		lenu Nickel	Silver		
idential ustrial								Capper	Fead	Mercury	ı			Vanadium	7
sidential	Ħ	0.39	5400	150	37	210	906	3100	904	73	# F	1500	965	E.	73000
dentia	410	1.6	00029	1900	450	450	1900	41000	908	310	5100	2000	5100	0001	10000
	æ	0.07	5200	150	1.7	17.1	099	3000	150	18	380	1600	380	ŝ	23000
CHHSL - Industrial	380	0.24	00063	1700	51	371	3200	38000	3500	180	4800	16000	4800	00/29	100000
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TABLE 2-c Sol Historic Analytical Results for the Year 1992 Humboldt Baykeeper

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Sumple 110	Date Depth (ft)	Antimony	Arrenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenu m	Nickel	Silver	Vanadium	Zinc
PRG-	PRG - Residential	31	039	5400	951	37	210	006	3100	5	F	190	0031	985	1	13000
PRG-	Industrial	410	1.6	92000	1900	450	450	1900	41000	908	ort.	5100	nout	2100	1001	10000
CHHST	CHHSL - Residential	30	0.07	2200	551	1.7	171	099	3000	150	18	380	1600	380	08.5	23000
CHHST	CHHSL - Industrial	380	770	63000	1700	7.5	37	3200	38000	3500	188	4800	16000	4800	9029	10000
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CHHSL - Cafformia Human Health Screening Levels, January 2005
1- Hearwalent Chromium Values used.

TABLE 2-c Soil Historic Analytical Results for the Year 1992 Humboldt Baykeeper

TABLE 2-c Soil Historic Analytical Results for the Year 1992 Humboldt Baykeeper

TABLE 2-c Soil Historic Analytical Reutls for the Year 1992 Humboldt Baykeeper

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All units in mykg. PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004. CHHSL - California Human Health Screening Levels, January 2005 1- Hexavalent Chromium Values used

TABLE 2-c Soil Historic Analytical Results for the Year 1992 Humboidt Baykesper

Depth (ft)	Fluoranthen	Pyrene	Benzo(a)	Сагумае	Berra(b) Benzo(k) Ba	Benzo(k)	Bento(a)	Berzu(g,h,f)	,	2.medbei
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# TABLE 2-c Soll Historic Analytical Results for the Year 1992 Humboldt Baykeeper

Sample ID   Date   Depth (ft)	Fluoranthen c 2300	Pyrene	Benro(a)	Сътужене	Berzo(b) Berzo(k) By	Bergar(b) Bergar(b)	Berro(a)	Berno(g,h,l)	fndena(1.2,3-	2-methyl
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TABLE 2-c Soil Historic Analytical Results for the Year 1992 Humboldt Baykeeper

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All units in mg/kg
PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004.
CHHSL - California Human Health Screening Levels, January 2005
I- Hexavalent Chronium Values used

# TABLE 2-4 Soll Historic Analytical Results for 1995 Humboldt Beykesper

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Page 1 of 6

## TABLE 2-d Soll Historic Analytical Results for 1995 Humboidt Baykesper

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# YABLE 2-d Soil Historic Analytical Results for 1995 Humboldt Baykesper

		(II) TPHd/mo	/hao TPHg	Kyknes	Вещепе	Tolor	Ethyl benzene	Oll and Grane	Tetracklors	Napthalene	Aceniphityjene Acenaphitene	censphihylens Acensphinens Fluurbe	Пастъе	Phenanthrane	Anthracene
FRG-1	FRG - Residential	77	10	270	0.64	520	400	ā	0.43	95	ž	1700	ATT.		onort
PRG	PRG - Industrial	ā	1	420	*	8	400	1	13	190	14	29000	7600	ä	640000
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TABLE 2-d Soli Historic Analytical Results for 1995 Humboldt Baykeeper

						Monosn	Monoaromatic Hydrocarbons	carbons				Polynuciear	Polynuciear Aromatic Hydrocarbons	nearbons		
or and mass	i	(E)	TPHdms	##	Xylene	Betterbe	Toluene	Rihyl benrene	Off and Cyrese	Tetrachloru	Nepthalene	Acensphiligiens Acensphilbens	Acenaphthene	Plantete	Phenanthrene	Anthracene
	PRG - Residentlaf		ā	T.N	27.0	25	8	400	ä	0.48	Τ	ā	3700	7700	2	22000
	PRG - Industrial	7	88	17.0	420	1.4	336	400	BE	1.1	130	ā	23000	26000	ā	640000
ថ	CHHSL - Residential	tal.	Ħ	118	1	ä	3	ä	1	H	W	7	ı	100	ā	ā
-	Cititat, - Industrial	121		24	60	Dat	70	NA.	==	#	3	a	ā	Ħ	ä	ă
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9-6	\$20/1995	0	,				,						ľ			
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6:0	9/20/1995	0			,						Ş	5	9	5	2 5	1
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57-0	9/18/1995	4		ļ	,											
95.50	9/18/1995	4		,										-		
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0.36	9/11/1995	4	,	•		•			,	-	•	٠			•	,
15:0	3/18/1995	7	•	•						•	0.16	2	£	쥪	E G	£
6-39	3/18/1995	4	•					,			DZ.	1.9	æ	ПH	ΩN	묫
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3	C661/F1/11					-		,			£	묫	£	£	Ø	Q
	10/13/1993					-		•		•	£	Ø	£	QX.	ę	CIN
11.0	11/13/1995	0		·	-		-				,	•		•		
1	11/13/1995	0		,	•			٠	•			,			,	,
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3.0	2001/11/11	-					•		1		•	•	-	•		•
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6.21	11/13/1995								•		•			1		
J	11/13/1995	9			,		,				. D.O.C.	:	.	.		١
6-5	11/13/1995	0			Ì,						0.016			2 5	-	2
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62	11/13/1995			•		٠		,	,		QN	₽	Ð	£	Q.	£
Marr	Maxumum Detected Value	Value	¥Υ	B. 1	ž	¥	ΚA	NA	NA	NA	0.16	=	ž	1963	75	50
T.	Ercred Residential PDC	200	,				,	•	-	•	z		<u> </u>	z	ĺ,	z
Z,	Exceed Industrial PRC	RG.	·	•	,			•		•	z			z		z
Licre	Exceed Residential CHRSL.	IIISI	•	•				-	•				•	٠,		
Excee	d Industrial Co	HIST			•			.								Ī

'- Not analyzed All units in mg/kg
All units in mg/kg
HRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004.
CHHSL - California Human Health Streening Levels, January 2005
I-flecavatent Chromium Vohers used ND - Not Detected ' - Not an

# TABLE 2-d Soll Historic Analytical Results for 1965 Humboldt Baykesper

Fluctualibria   Pyrene   2300	anthracett	ā	fluoranthens	Couranthene	PATRIBE			
$\parallel$	G.62					1	and the last	Daphthalen
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+		0.28	0.1	R	0.637	E E	6100	
-		0.037	£	Ŋ	0.022	0.033	문	٠
		T,	0.25	£	CIN	Q.	Ę	
	0.13	660.0	0.058	Q	Œ	200	Ę	
	6440	0.637	OTAL	5	5	5	140	
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# TABLE 2-d Solf Historic Analytical Results for 1995 Humboldt Baykeeper

:	,					Poly	nuclear Arom	Polynuclear Ammetic Hydrocarbons	bons			
or end marc	5	(ii) tudəri	Portugue.	Pyrene	Benzo(a) anthracena	Chrysette	Bento(b)	Benzo(h) fluorenthene	Bento(a)	Benne(g.h.l)	Indeno(1.3.3-	2-methyl
	PRG - Residential	-	2300	ä	2910	G	2918	2	£062	ā	g	ı
	PAG - Industrial	7	22000	REL	17	210	17	Ħ	1170	ā	21	ı
Ü	CIHSL - Residential	riai	50	ā	w w	977	1		0,038	a	ā	A
	Citifist, - Industrial	141	101	60	Ħ	ā	77	1	Q.13	1		ā
0.5	5661/02/6	0	OM	ŒΝ	0.16	510	71.5	묫	0.044	£	£	١
C-50	9/20/1995	0										
G-52	\$661,02/6	0	٠							•		
95	5661/02/6	0							ļ.	,		
0-7	9/20/1995	D	£	£	£	9	Q.	S.	E	Ē	Ę	,
Q-K	\$661/07/6	0	£	2	9	Ş	£	Ę	Ę	Ę	Ę	
6-8	\$661/0Z/6	•	£	£	2	ç	9	Q.	Ę	Ę	Ş	
71-0	5651/12/6		<u> </u>									 
6-25	9/13/1995	7	,			,			-			
6-35	\$261/ <b>\$</b> 1/6	4										
0-27	9/18/1995	4			,				-			
6:39	9/11/1995	4								,	Į.	
G-30	\$661/JI1/6	4	,		,							
G-31	9/18/1995	4	,		,	-					***************************************	١,
G-32	9/11/1995	7			,							
0-33	9/11/1995	7							•			
0-35	9/11/1995	7							١.	-		 
0-36	9/18/1995	7							,			.
0-37	9/18/1995	4	æ	Ø	æ	Ð	£	₽	£	9	QX	
0-39	9/18/1995		뫄	Q	Œ	0.298	£	2	£	2	£	
170	9/11/1995	7	0.3	0.2	0.15	Ct a	80.0	2	1,00	0.047	9	.
Q-12	9/18/1995	4	0.D4	ΔĐ	0.041	:0.022	£	9	£	£	£	
7	9/18/1995	*	1000	Ð	0.03	Ð	묫	æ	욮	C.07	£	١,
0-1	11/13/1995	a	Ð	₽	2	Ð	Ð	ΩN	2	2	2	,
0-10	11/13/1995	-	Ð	9	£	₽	CN	Ð	GN	₽	£	١.
9:1	17(3/1995	-	£	S	£	₽	₽	Ø	D.	문	£	
0-12	11/13/1995	0	٠	,								
0-13	11/13/1995	D	•	,				•			,	
0:14	11/13/1995	0	-	·	,	•	•			٠		
515	11/13/1995	0		,	-	,	•			•		,
91-10	11/13/1995		•			,				•		
61-5	11/13/1995	d			,	-		-				
	11/13/1993	9	-	•				٠		-		
7	11/13/1995	Q						•	,	٠	,	,
25	10/13/1993	-	,	-		-		•		,		٠
	11/13/1995	G				•			$\left  \cdot \right $	,		
7	11/13/1995	6	0.15	0.15	0.12	0.033	g	9	0.035	£	6.027	٠
5	11/13/1993	6	270	17.0	0.12	0.07	0.13	0.062	0.069	0.12	0.075	,
3	2661/21/11								į		-	
3 5	26/1/1/11		2 !	2	2	Q.	足	운	문	£	£	,
3	1/13/1993			ĝ	g	9	£	₽	묫	£	Q	,
3	11/13/1995		£	9	2	£	£	딛	£	£	Q	
Mar	Maragram Defected Value	Value	635	5		-	6.15	ž	0.15	0.073	a tres	ź
Err	Erreed Residential FRG	FRE	z		Yes	z	×	,	Ϋ́	,	×	•
1	Exceed Industrial PRG	'RG	z		z	×	z	•	z	•	z	
	THE RESIDENCE OF THE CAMPACITY	HI DE	•	1			•		Y.	-	•	
Link	ביו דענים וייי	ILISI.		-		-	•		Yes			•

# TABLE 2-e Soil Historic Analytical Results for the Year 1996 Humboldt Baykeeper

										METATE							
Sample ID	Date	Depth (A)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Соррет	Lead	Mercury	Molyhdenu	Nickel	Silver	Vanadium	Zinc
PI	PRG - Residential	1	31	039	\$400	150	4.2	250	52	2100	490						
E.	PRG - Industrial		410	1.6	67000	1900	450	450	200	41000	904	57	Die.	1600	390	78	23000
CH	CHHSL - Residential	ıtial	30	0.07	5200	150	1.7	1,41	099	3000	150	100	200	Men 2	5100	000	100000
	CHHSL - Industrial	lei	380	0.24	00069	1700	7.5	121	- Contract	Ourat	3500		Dac.	DOT	Dige:	330	23000
T23-S01	4/29/1996	4	  -						2400	20000	Mee	na r	4800	16000	4800	6700	100000
T23-S02	4/29/1996	7								-		•	-	ا.	-		,
T23-S05	4/29/1996	4			,				•		1		-		•	<u>'</u>	•
T23-S06	4/29/1996	2.5		-						•			•	_	,	1	,
T23-S13	4/29/1996	-	-						ŧ		•	1	•	_	-		
T23-S14	4/29/1996	-	,						•	1	-	-	·	,	'	•	
T23-S17	4/29/1996						•			,	1	<u>'</u>	i	1	,		
T30-S10	9661/1/5	3		,				•	-	-		-	-		١	•	
T30-S11	9661/1/5	3	,	,		<u> </u>	•						-	<u>'</u>	١	•	
T30-S12	5/1/1996	1				•	•	,			1	-	1		•		,
131-501	9061/1/5	27.6			•	'		,	,		•	•	•				-
CUS-TEL	2/1/1996	-				<u>'</u>		-		•	•		•	1	,	,	-
731.503	5/1/1006	,		•	•		-		•	•	•	•		•	,		
1-0	7/10/1006								-	•		•	,		-		
	7000000		0,1	93,9	260	0.19	4.	54.9	10.5	117	138	0,19		52.5	0.12	42.4	130
3 2	7/10/1996			•	-	_	-	-	•		530						
12	7/10/1006		7.0	-	, ,	•	•	1	,	1670	886	'	٠		1.7	•	1050
3	7/10/1005		5	,	0.21	-	-	-		13800	2490	0.11		1:1	2.9		160
9-10	7/10/1906		-	31.8	•	-		-	ı	,			1		-		
2-14	7/10/1004		-	8	-		-	-		•		,	-	,	-		[
2.2	7/10/1006		<u> </u>	<b>-</b>	•		-	,	•	1	-	1	,	-	,		
2	7/10/1006			25.5		•	•		,	-	•					-	
S-4	7/10/1996			13.4		•	•		-		•	•	•		1	-	,
S-52	7/10/1996			2.4						•	,	-	-				
6-S	7/10/1996			=				•		-	,	t	1	-	<u>-</u>	•	•
S-11	9661/11//		,	3.6				•	1	-	-	-	1	ŀ	•	٠	•
S-12	7/11/1996			10.8					-	-		,		•	•	,	•
S-13	7/11/1996			2.01						-		-		-	,	,	1
S-6	9661/11//			8,4	,	-			-			•	-	-	1	-	-
S-7	7/11/1996		,	5.6						,	•	•	-	•		,	
Maxom	Maxumum Defected Value	Value	157	112	260	010	-		,						1	-	-
Ercee	Exceed Residential PRG	PRG	, Z	7	2	2	***	r.	Cal:	13800	2490	0.11	NA	52.5	2.9	42.4	1050
Excee	Exceed Industrial PRG	RG		7	2	: 2	1	;	z ;	2	Z X	z	-	Z	z	Z	Z
Exceed	Exceed Residential CHHSL	HEST	Yes	Ž,	ż	2	2		2 2	٤;	2	z	•	Z	Z	z	N
Exceed	Exceed Industrial CHHSL.	THE		į	: 2	2	=		ج	Z.	Z	z	-	z	X	z	z
		-	_	0 7	5	=	-	X	2	z	2	2			,	ļ	Ī

All units in my/kg
All units in my/kg
RRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004.
CHHSL - California Human Health Screening Levels, January 2005
1 - Hexavalent Chromium Values used
ND - Not Detected
- Not annlyzed

TABLE 2-e Soil Historic Analytical Results for the Year 1996 Humboldt Baykeeper

							-		7							
						Мопов	Monoaromatic Hydrocarbons	carbons				Polynucien	Polynuclear Aromatic Hydrocarbons	drocarbons		
Sample ID	Date	Depth (ft)	TPHd/mo	TPBE	Xylenes	Benzene	Toluene	Ethyl	Oil and	Tetrachloro	Napthalene		Accasphibyl Accasphibe	Fluorene	Phenanthren	Anthracene
								3					311	İ	u	
	PKG - Kendentia	IN.	nn n	1111	270	0.64	520	400	80	0.48	56	HI.	3700	2700	пп	22000
-	rkG - Industrial		80	E	420	1,4	520	400	מט	1.3	261	811	29000	26000	na	6400000
CEI	CHHSL - Residential	ıtial	na	80	BO	118	na	813	uu	BII	82	80	\$10	80	ВП	5
CH	CHHSL - Industrial	riel	118	80	BU	811	朝日	82	80	п	8	. 80	811	80	811	2
T23-S01	4/29/1996	4	2	æ	QX.	QZ	QZ QZ	QN	-		,	,			,	
T23-S02	4/29/1996	2	Q	QX	QN.	Q.	ON ON	£		,	-		<u> </u> ,	,		Ţ.
T23-S05	4/29/1996	4	£	S	Q.	Q	S	Q					,	-		
173-506	4/29/1996	2.5	Ð	S	QV.	QN	£	Q	-	,	-			-		
T23-S13	4/29/1996	3	ND ND	Q.	ΩN	Q	ΩN	S		,	-					,
T23-S14	4/29/1996	2	Q.	ND	CIN	ND	N O	S		ľ				•		
173-517	4/29/1996	m	Ð	£	Qχ	ΩN	QN	ND		,		_		,	,	
T30-S10	5/1/1996	m	2	3000	_	•	•	1	-			,	-	<b> </b> •	,	
T30-511	5/1/1996	"	130	009		•	-		-	ı	•	•			-	
T30-S12	5/1/1996	3	Ð	£	•		•	)			-			  - 		,
105-1ET	5/1/1996	2.75	1600	8600	1	-	,	-	•	-	-					-
T31-S02	5/1/1996	m	Q	3.2			•	•	1			1			,	,
T31-503	5/1/1996	3.5	310	88		-	ı		,	,	ı		,			
ä	7/10/1996		'	•	_	•	•	г			0.054	£	ę	£	0.035	S
D-3	7/10/1996		-	•				•	•		QX	QZ	£	2	£	QN
Ā	2/10/1996		•	-	•	-	-	,	1	•	£	£	£	문	0.031	£
2.0	7/10/1996		-	•	-	,	-	1		-	Ð	2	£	£	£	Q.
S-1	7/10/1996		1	•	1	•	,	ı	1	-		ı	,	١.	-	
S-10	7/10/1996		•	-	•	ı	,	•			1			,	,	
S-14	7/10/1996		•	1	•	-	•	•		1			,		,	,
S-2	7/10/1996		-	•	1	•	•	1		1			-		,	
S-3	7/10/1996		·	-	•			-		ì			_		١.	-
S.	7/10/1996		•	•	1	t	,	-		-			-	-		
S-8	7/10/1996		•	•	,	٠	,			1	٠	•				-
S-9	7/10/1996				•			1	-	•	-	٠		-		
1.5	7/11/1996		,	•	'	•	•	,	,	ı	•	,	,		,	,
S-12	7/11/1996		·	-	•	•	,	,		,	1			,	•	
S-13	7/11/1996		-	•			1	•	•	-		_ _	-		,	,
S-6	7/11/1996		٠	,			,			1			,			<u> </u>
S-7	7/11/1996		•	-	•	-	•		•	,			_		-	
Maxun	Maxumum Detected Value	Value	1600	8600	NA	NA	NA	NA	NA	NA	0.054	NA	NA	NA	0,035	NA
Excee	Exceed Residential PRG	PRG	,	•	•	•	ŧ	•	-		N	1		1		
Kree	Exceed Industrial PRG	PRG		1		1	•		ı		N	•		,	•	•
Exceed	Exceed Residential CHHSI	HHSL	·		1	•	1	•		-	•	•	1	•	•	,
Exceed	Industrial C.	HHSL	-	•	-		•	,		-				,		,

All units in mg/kg
PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004.
CHHSL - California Human Health Screening Levels, January 2005
I - Hexavalent Chromium Values used
ND - Not Detected
`- Not analyzed

Page 2 of 3

TABLE 2-e
Soil Historic Analytical Results for the Year 1996
Humboldt Baykeeper
Humboldt Bykeeper

_				_	_	_	,																																	
	2-methyl naphthalene	60	80	80	2							,		,		-	-	1							,						'	,	١,			NA	,		1	,
	Benzo(g,h,i) indeno(1.2,3- 2-methyl perylene ed) pyrene naphthalene	0.62	2.1	En	811							•		-		Ì.			S	£	S	QN				,		1	,				,	,		NA	,			
	Benzo(g,h,i) peryiene	800	80	=	8									•	•	-			QX	Q	QX	Q.	١		,		,				-			١,		NA		,		
1000	Benzu(a) pyrene	0.062	0.21	0,038	0.13		  -	-						-		١.			£	S	Ð	QN.				1		1	٠				-	-	-	VΑ	,			
tic Hydrocart	Benzo(k) Auoranthene	6.2	112	2	8			Ì,					,			,			£	Q	£	QN			,					,	,					NA	,		,	-
Polynuclear Aromatic Hydrocarbons	Benzo(b) Benzo(k) Guoranthene Auoranthene	0.62	77	ŧ	1		-	-						-			,		Š	Ð	S	DD				Ţ	•	-	1	-					L.	ΥN	,	,		-
Poly	Chrysene	29	210	пя	88			1							1			ı	ND	£	£	QN	-	ı	,	,		,	•			-	ı			NA		1		•
	Benzo(a)	0.62	2.1	118	85		-	-	,	٠	,	1	-				•		£	ΩN	ND	ON	•		•	1	ı	1	-	•		1	,	1	-	NA	1	ŕ		-
	Pyrene	811	DB	80	80	,			•	1				•	,	•	-		0.027	QN	0.072	Q.	1	-	•	-	-	'	٠	•		-	ı			0.072	-	-	-	
	Depth (ft) Fluoranthen	2300	22000	60		,			-		,			•	-	-	•	•	0.12	QX	QV.	ND DA	•	•	-			•	,	•	1	•	•	-	-	0.12	Z	Z	ı	•
	Depth (ft)	ed .	-	tial	ii.	4	rı	4	2.5	Е	2	Ð	3	3	Э	2.75	6	3.5																		Value	PRG	RG	HHSL	HSL
	Date	PRG - Residential	PRG - Industrial	CHHSL - Residential	CHHSL - Industrial	4/29/1996	4/29/1996	4/29/1996	4/29/1996	4/29/1996	4/29/1996	4/29/1996	5/1/1996	5/1/1996	5/1/1996	5/1/1996	9/1/1996	5/1/1996	2/10/1996	7/10/1996	7/10/1996	7/10/1996	7/10/1996	7/10/1996	7/10/1996	7/10/1996	2/10/1996	7/10/1996	7/10/1996	2/10/1996	7/11/1996	7/11/1996	7/11/1996	7/11/1996	7/11/1996	Maxumum Detected Value	Exceed Residential PRG	Exceed Industrial PRG	Exceed Residential CHHSL	Exceed Industrial CHHSL
	Sample ID	PF	P	CED	нэ	T23-S01	T23-S02	T23-S05	1723-506	T23-S13	T23-514	T23-S17	T30-S10	T30-S11	T30-S12	T31-S01	T31-S02	T31-503	<u></u> 1	D-3	D-4	D-5		S-10	S-14	S-2	S-3	S-4	S-8	8-9	S-11	S-12	S-13	S-6	S-7	Махип	Excee	Excer	Exceed	Exceed

All units in mg/kg
PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004,
CHHSL - California Human Health Screening Levels, January 2005
1- Hexavalent Chromium Values used
ND - Not Detected
- Not analyzed

TABLE 2-f Soll Hittoric Analytical Hesults for the Year 1999 Rumboldt Baykeeper

G-mule 10				-						1111111							
on and and	Date	Depth (R)	Antlmany	Arsenie	Barlum	шишесе	Cadmium	Chramium	Cobali	Capper	Lead	Mercury	Mulybdenum	Nickel	Silver	Varadium	Zlac
	PRG - Residential		15	639	5400	150	37	910	0006	3100	400	23	390	10000	390	7.0	13000
Ü	HSL - Residen		2	0.07	5200	150	2.1	-=	999	1000	至	138	380	1600	I I	- FS	23000
J	Cillist ledustrial		) NRC	0.34	63000	1700	7.5	37,	3200	38000	1500	180	4908	16000	4300	6700	100000
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3	2774/1099	4 -4				•		• •			Š		•		•		
6-33	2/24/1999	-								•	<u>.</u>		•			•	
G-35	2/24/1999	7		•	-	٠					11		,	-		1	
3	2/24/1999	4	•	•			•	,	,	Ī	2		,		•	,	•
3 2	1/15/1999	5				•		. ,			3 2	,	<u> </u>		-		٠,
6.56	2/25/1999	-							. •		Z				•	•	
75-5	2/25/1999	0				•	•				t	•				***************************************	
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90	6/16/1999	113					•			•	Ç						
3	6/16/1999	-			<u> </u>				: •		\$6				i.		,
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10-K-X-15	6661/0/8	-		•	• • •				• •		7,		1				
SHN-5-03	6661/E/1	9															•
10-5-015	6661/17/1	_	•	ç	•	•				•	9	•	•				
SHN-5-05	6661/6/2			7			,		•		= =						
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SIN-S-11	6661/1/1	-	•	2			:				16		: 	 -: 1		? '; •	
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51N-S-14	6661/7/1	-		7.					. ,		â						
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SEN-5-17	8/3/1999				. .						Ę			(		!	
11-5-VII5	173/1999	-		2							2		٠	,			
S16X-5-19	8/3/1999			Q.	•	•	1		1		•	•	:	•:	4	•	•
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51.5-XII5	1/4/1999	-		9.6	•	-				•		•	•:	•:	•	.:	- 1
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SHN-SP-11	1,5/1999		***************************************		- the state of the	•					31					•	٠

TABLE 2-f Sull Mistoric Analysical Results for the Year 1999 Humboldt Baykreper

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11	11    0.49   5.800   150   249   249   249   2490	ŧ	======================================	Antimont	Amenic	Berium	Beryllum	Cadmium	Chromium	Coball	Copper	Lend	Mercury	Malybdenum		Silver	Vanadium	2lac
14   1.6	141   154   5100   150   170	_		ī	0.39	5400	150	37	318	206	3100	400	23	390	0091	390	22	13000
1.0   0.117   0.200   150   1.7   1.7   1.0   1.0   1.5   1.0   1.5   1.0	1.0   0.107   5.000   15.0   17.0   17.1   56.0   18.00   15		-	110	9'1	67000	1900	450	459	1961	41000	BOO	310	5100	DODGZ	5100	t 1000	100000
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-		130		,	Yes			•	,	•		Yes	٠	,	z	•	,	z
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All units in mg/kg
PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004,
CHHSL - California Romans Health Screening Levels, January 2003
1- Heasvolant Dromitum Values used
ND - Not Detected
ND - Not Detected

7ABLE 2-f Soil Historic Analytical Results for the Year 1999 Humboldt Baykeeper

		Denly					ŧ	Frhy henrene	Cil sud	Tetrarabora	_	Azenanhihyle		7		
Sample 1D			T P 14 d'ma	#	Xylenes	Benzene		Litary Dentered	Greate	ethrne	Nepthalene	. 2	ne Acenaphthene	Fluorene	The country are a	Anthracen
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PRC	- Industria		2		2	3	210	907	2	1	D61	=	29000	26000		190000
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1 'S	2015/1979	* :	. 5	. 12	. 5	. 5	. 6	Ş					, .	. .	. .	
5	6/13/1999	2	2	QX	Q	S	ç	Ş								
<u>.                                    </u>	6/13/1999	\$1	,	95	D:001	2	£	£			•					
G-63	6/15/1999	şţ	£	290		1 ;	•	,				,	•		•	
	661/5/19	13	-	Q			•	•	,	•	,	·	•	•		
1	6661/51/9	=	CX.	2	2	2	2	2	1						•	
+	6417179	2 5	ONGX	25	2	Ž Ž	2 5	2 5								
╁	6716/1909	3	CAUX	Ş	12	2.5	9 5	2				]. ]				
t	6661919	12.5	OVON	Ş	2	Ş	Ę	9000			S	ĝ	N	2	2	2
	6/16/1999	-	NDAD	Ş	•	٠	•	•			Ž	2	Ş	ΩX	ΞŽ.	G.
G-66	6/6/9/9	22	CIACIN	QV.		٠	•			•	S	QN	ΩN	GX	Z	묫
0-67	6/16/1999	-	NDVD	S.				•		-	£	2	2	2	2	9
4	66170170	-	NUM.	2 5			•:5	1000		•	2 5	2 2	2 5	2 5	2 2	2 5
	6711/1000	• 5	1800/1/09U	740	2	2 9	9	Ç.	. ,			- ·	,			
	6/61/11/09	57	910/1708	2	Ž	ę	QN.	Č	,	٠						,
135	67111999	7	19000/16000	150	ΩX	Ç		Î				•	•	•		
176	6561/11579	1	4 (00/14/09)	2	£	2	Q	Q.			,	•				
	6601109	7	6400/1200	160	2	ş	Ş	£	•	•		•	•		•	
100	6661/1176		. 1.03	·	. 5	. 5	62	, 5	•	,			•			. .
102	17/1400	-	1671	2 5	9	95	5	į	•							.
N-5-13	873/1999	-	9.4750	Ę.	2	9	Đ	£		٠	,	•			ŀ	
E-S-E	#/3/1999	æ		,	ΩŽ	Ş		£			Q.	Q	ű	QX	Ç	Ş
17.5.2	06010	_	1362	2 :	2	2 :	9 9	₽ 4	•	,	. !		. 9		. 0	
20.2	77.1100	-	OCION I	2	2 5	2 5	2.5	2.5			7700	20.0	9		2000	
2.5.07	1/3/1999		0		2	Ę	₽	£				,				٠
10.5.V	65617678	-		•	ī.	2	2	ę				•	•	•	,	
9	6661/17	-	,	.	Q.	2		£			٠				•	•
20.0	1991/1999	-	37/130	Ž S	Z	žá	2.5	2 5		 		,		•		,
7.5	6661/E/3	9			O.	Ę	E	ž		•	2	g	QX	S	0.042	2
N-5-12	6661/[/1	-		•1	ŝ	2	2	2	,			•			•	•
2.5	6661/03	-	240/420	2	2	2	₽ :	2	1		•			•	•	•
1 2	6771909	-	a literal	,	ž	2.5	2.5	2 5					•			
5HN-5-16	6661/12	-	WD/19	2	2	£	5	2		•	0.035	7500	0.009	B100'8	0.23	ž
N-5-17	6661/17	-	25/81	CN	QZ	Ş	2	Ź				•	١	٠		
Zi-S-17	6661/01	-					. !	• .			,	•		-		4
	6661/1/	-	97/150	ę	2	2	2	2	,				•		•	
7.5.7.X	6461777				2 2	• • • •	ž ĝ	ž ž						•  •		
N.S.23	6661/1/8	-			Ş		û	ŝ		1					•	•
7.5.X	666177	-			QX		£	ź	•					•	•	•!
N-5.15	6661/1/	-	•		욧 :	٠	€ 5	ĝ;			Ī	•	•	• • • •		
12.5	175/1464	-	•		2 5		2 2	2 2							• •	. .
SHN-5-26	1/3/1999	-	•	,	Ş	٠	ş	2					,		٠	•
14-5-27	8/3/1999	-		•	윷 (		2.5 2.5	2			•	:	1	,	•	•
2.5	1,5/1999	-	•	,	9	٠	ç	27.		•	•	•	•	•	•	
110		=		5	44	-	2	S								

TABLE 2-1 Soil Historic Analytical Results for the Year 1999 Hamboldt Baykeeper

_														****	-																				75.95			_	
	Anthracene	22000	100000	•	E						•				,		•			•	•					,			,			Q	2	QV	0.014	z	Z		
	Phenanthrene	2	<b>1</b>	2	2	,	•		,						,				1	,	•	•	١	1	,	,		•	•		•	Q.	Z	QV	0.22	,	,	•	
scarboss	Fluorene	2700	25000	=	Ē				,		•										•		٠	•			•	•	,	•	-	Ą	Ź	ND	0.005	×	z		
Polynucicar Aromatic Hydrocarbon	Arenaphthene	3700	29600	8	ā		,		,						•				1					,		•	•	,	,	•		NO.	æ	ND	0.009	z	z		•
Polynuciese	Arenaphtbyle A	ā	50	70	ī			,		,		,					,			,		•				,	•	•	,	•	• 1	2	Z	ON	0.037	•			•
	Napibalene	98	190	-	ā			,		,	٠			,	•		,	,		•	•			,		,			,	•		Q	Ź	QV	0.085	z	z		
	Tetrachlara	0.48	1.3	R.C.	2					,				,		,		,		,					,	,	•				•	Q	Ē	ND.	NA	•			
	Oil and Grease	Ē	411	EN	Ē	,	٠		,	,							•			,				,				,				•		,	Ϋ́Υ	•	•	-	
arbons	Elhyl benrene	400	400	R.M	Ē	GK	Z	Q	G.	E.	ž	Q.	OK.	č	£	S	윷	윷	S	ş	ð	문	Ş	2	Q.	ð	2	£	£	£	2	£	Q.	NED.	9.00	z	Z	•	
Monnaromatic Hydrocarbons	Toulene	003	530	114	2	N	Q	Ð	9	Đ	9	£	ã	g	2	2	£	Z	ŝ	£	5	7	2	O.	œ.	Ę	2	2	GZ.	ź:	<del>2</del>	Q	Ē	ND	Ϋ́ν	,		-	,
Monnal	Benzene	0.54	1 11	#2	2	ON	ź	Ē	ź	Ē	'n	Ź	Q	č	ź	2	g	£	Ž	S	2	2	2	2	Ş	Ş	£	S	Ð	ş	ę	9	웃	2	ž	,	٠		,
	Xylenes	170	420	10	ĸu	CV.	QX	Ç	ą	£	Z	9	9	£	2	æ	Ç	SX	Q	ΩX	UN.	ž	2	2	2	Ę	줐	Ž	Q	2	R	Q	Ž	ON	0.005	z	z	•	
	17112	50	80	10	B.f.	CIN.	QX	Ωž	Z.	Q.	ON.	Ş	ΩX	Đ.	2	Ð	G.	2	Ω.	CZ.	77	2	2	Ð	Q.	Ê	2	NC NC	£	2	QN	Ð	2	QN	738	•	-		
	TTIId/ma	£0	103	11	114	76/GN	ND/94	ND/74	ND/75	ND/158	ONGN	ND/54	WD/210	XD/42	ND/130	XD/24	KDCH	9E/GM	61/GN	057QX	LL/GN	ND/150	ND/350	011/GX	6D/DN	ND/130	ZD/ET	ND/ND	NDAD	NDAD	ND/ND	NDWD	NON	ONON	19000/18000	•	,	•	
	Depth (R)	יו		ital	19	a	0	a	0	a	0	g	0	۵	0	0	0	0		0	0	0	0	0	0	=	0	4	13.5	7	2	4	\$	5	Value	75.0	RG	HHSL	11151.
	ř	PRG - Residential	PRG - Industrial	CHIISL - Resident	CHIEST Industrial	6661/\$/1	8/5/1999	E/5/1999	115/1999	6661/5/1	1/5/1999	8/5/1999	875/1999	175/1999	8/5/1999	875/1999	875/1999	8/3/1999	8/5/1999	6661/5/1	8/3/1999	173/1999	\$25,1999	\$75/1999	11/3/1999	6661/5/1	6661/5/1	6661/6/3	109/1999	6661/01/3	L10/1999	£/10/1999	6661/DIA	0.00	Manum Defected Value	Exceed Residential PILC	Excred Industrial PRG	aceed Residential CHHS	Exceed Industrial Cititi
	Sample 1D	P.	P	CII	ő	S16N-S9-12	5184.59-13	SIN-5P-14	S##-SP-13	51EN-SP-16	SIN-SP-17	SIEN ST-18	5107-57-19	SHN-51-10	S104 SP-21	516N-5P-22	S18N-51-23	SHN-5P-24	511N-5P-Z5	5115-515-26	511N-5P-27	SHN-SP-4	SHN SP.3	9-dS-NHS	SIIN-5P-7	-ds-NIS	SHN-SP-9	SHN-WP-	SIN-WP-	5HN-WP-2	SHN WP-1	E-4M-NHS	T.M-NIS	SHN WITS	MARK	Eir	Etc	Excen	Erre

All units in mytg
PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004.
CHISS. - California Human Health Screening Levels, January 2005
- Heaves Commun Values used
ND - Not Detected
- Not amplyzzał

TABLE 2-f Soll Historic Analytical Results for the Year 1999 Humboillt Anykeeper

5.	i i	Τ		Ĭ	Ī			Ī		;									:					:					:				1			T				1				:							: .	Ī	-				
J.medhy	saphthala sa	1	1	8		•	•	·  ·			٠	,	•	'	•	٠	•				•	•	•			٠	,	•	:		•	• •	•	•	•	•	2	KHE	1	• •	٠	•	. 5	,	,	•	,	•	'	•	14	1	1		1	1	•
Indeno[12,3-	ed) pyrene	1.1		2		•		, ,		•	•	•	•		•	•5			,	and the state of the state of		•	•	•	ΩN	ŝ	2 5	2 2	2	Annual Control of the Control		• •				•	2	10.0		•			. 5		•		0.014					•	,		•		
Denzo(g,h,l)	Marelene	2	1 2	=											•	The second second				A THE WAY IN THE CASE AND THE	,	•	•	•	ΩN	QX	2 5	2 5	9	•	•			•			2	0.016	•	• •		,	. 53	} ,	•	•	100	•				•				. .	
dns Benzo{a)	DATENE DAGS	0.31	0.038	0.13					•			•			•		•				,	•	•	•	GZ.	2	2	2 5	2	•	,			,	: G•		2 .	0.019	• ;	, .	•			2. 1	•	,	2		•	,							
alle Uhulrucast Benzajk)	flungantbene 63	I		Z	,				•		,			,									•		Ę	2	2	2 2	2			• •		•			<del>2</del> .	6.014	•		•		. 12	1		•	0.017					•		•			
Polynuclear Aromatic Ilydrocas Genro(b) Benrack)	Ountramhene G G	17	1	=		•	•							•	,		•		•						GN	SIN.	2 5	žź	2		•	• •				•	2 ·	0.059	•	• •			, 55	;		•	0.016	٠		. ,			•		•		•
Pol	. 63	110	91	#I			•	. ,			•			•				•	•		•	,			QN	ND	9:5	2.2	GN		•			•		• }	2	0.017		. ,			100	en.			0.078						• • •				
Benzo(A)	Enthrarent P.67	17	=	2			•			,	•		٠	•		•	•							•	Q.	ND	2.5	2,5	2		•	•				. 9	Ę.	11.036		. ,		•	. 5			•	0.053							:			,
Pyrene	2			EG.			•						,		-	•		,			•	,		, .	Đ	ΩŽ	2 9	2 5	Q	•	1		,				2	0.063				•	400	,		4	- 12114	1	,			•					
Fluoranthene	2.100	22000	1	Ħ		•	•	,			,	•	•	G		•	•							, .	ΩN	QN	2 5	2 5	ND				•	1			Œ.	000		•		•	2				11.11		•			•			•		
Depth (R)	_	-	1	尹	e	FI	**	-		_	М	-7	c	٥	0	0	*	] =	?	7	=	= ;	57	3	12.5	-	<u>.</u>	5 1	-	\$ <del>?</del>	2 -	-	-	-	-	- ,	e -		-	-	-		_ <	_			-	_	_	-:-		- -			_ -	-	_
Date	RG - Renidenti	RG - Industria	CHHSL - Neidratia	CHRSL - Industria	5/24/1999	2724/1999	17247999	274/1996	2/24/1999	2725/1999	273/1999	175/1990	275/1999	2725/1999	2725/1999	777571999	6/15/10/10	6661/51/9	6/13/1999	6/13/1999	6/15/1999	6/15/1999	641371999	666179179	6/16/1999	6/16/1999	6/16/1999	6/16/1009	6661/91/9	6661/182/9	67171999	6/21/1999	6651/112/9	6/23/1999 artribas	1/3/1999	8/3/1999	1/1/1999	8/3/1999	1/3/1999	8/3/1999	8/3/1999	8/3/1999	1771999	8/3/1999	#C3/1999	1/3/1999	173/1999	8/3/1999	1/3/1999	96601/5/1	6661/1/18	474/1999	5661/2/1	6661/5/1	8/3/1999	6661/5/1	175/1999
Sample 10	а.		Ü	Ü	6-54	6.51	3	15	0.55	6-56	G-56	0.56	6-57	5.0	8.5	3	5	0-62	6-63	G-63	5-63	9-61	į	5 3	G-65	Z	20 1	3 5	5	107	ř	36	Ë	138 50 5.5.01	SINS	SHN-S-03	75.2	SEN-S-US	97.5.75	SENSOR	SHX-S-X	5474-5-10	7.7.7	SIN-5-12	SIN-S-13	SHA-S-14	SHA-S-16	SHN-5-17	511X-S-17	1 5 7 7 15 2 7 7 15 2 1 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SIN-S-22	5117.5.21	212.62	SHN-S-10	SEN-5-21	SIN-S-27	Sitk.5.28

TABLE. 2-f Soll Historic Analytical Hesults for the Vear 1999 Humboldt Daykeeper

_					P.	vnuclest Arom	Polynuciese Aromatic Hydenearhous	unt			
Sansple ID Date	Depth (B)	Fluoranthene	Pyrene	Benzo(s)	Chrysene	Benzo(b)	Benzo(k) Gunzanthene	Berteu(a) DVPCBE	Benzo(g.h.l)	indemo(1.2.3-	2-medhyl nanhthalene
PRG - Residential	14.	2300	1	197	62	19'11	13	1.D62	ž	29"0	Ŧ.
PRG - Jedustrial	£	22060	11.8	17	210	17	21	0.21	12	2.1	113
CHIISL - Residentia	attel	1	at.	2	ž.	E	1	0.038	:	2	11
CHRSL - Industrial	쿈	==	Ē	82	•	<b>1</b> 11	<b>1</b> 11	0.13	=	10	TI.
5661/\$/# \$1-d5-N18	0	•				٠				,	
	•								<u>.</u>		
SHX-S7-14 II/5/1999	0										,
6661/5/II \$1-d5-N185	٥		,		•	•					
SHTN-SP-16 II/5/1999	0					•					,
SHN-SP-17 11/5/1999	0		,					•	,		•
SHN-SP-18 #15/1999	=								,		
991/8/B 61-15-WHS	0		•	,				•			
6661/5/8 III-dS-NIS	0					•				•	
	0				. •					٠	
S1fN-5P-22 8/5/1999	0	,							•	•	
666U\$/E 17:45:NHS	•			•							
SIIN-SP-24 IJS/1999	0				•		•		•		
S11N-SP-25 L/5/1999	-					,		٠			
SIIN-5P-26 IVS/1999	-			•			•			,	
	0			,			,		•	•	•
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	D				•	,	•		٠	•	٠
-		,	٠	•	•	•	•	•	٠	٠	
- 1	•		•			•		•.		•	•
	~		•	,		•	•	•	٠	•	•
SHN-WF-1 B/9/1999	15.5	•	•	٠	•	٠		٠	•	٠	٠
_	~			٠.				•	•:	•	• ;
7	2	,			.:	,	,		,	•	•
_	,	묫	2	2	Ę	S	Ę	문	Q	ΩΩ	
SHN-WP-4 B/HB/1999	w.   4	95	25	5.5	£ £	99	25	2.5	25	25	
ij	Value	4777	0,063	1,053	0.678	0.059	10.0	610'B	0.016	0.014	15000
Exceed Residentlal PRG	PRG	×		z	z	z	z	z	_	×	
Excret Industrial PHG	PNG	z	•	z	z	Z	Z	z	,	×	
Eigend Residentist CilffS1	711112T		,			٠	٠	×	٠	٠	
Escred fabritrial CEHSL	TSHIR	-	,		•	,		z	•		٠

All units in maying PRG - Preliminary Remediation Goal, EFA Region 9 FRG Table, October 2004, CHISL - California Human Health Screening Levels, January 2005 Heavashard Chronium Values used ND - Not Detected - NOt smalyzed

TABLE 2-g Soil Historic Analytical Results for the Year 2001 Humboldt Baykeeper

										METALS							
Sample ID	Date	Depth (ft)	Antimony	Arsenic	Ватіит	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lend	Mercury	Molybdenum	Nickel	Silver	Vanadium	Zine
E	PRG - Residential	=	31	0.39	5400	150	37	210	9006	3100	007	13	390	1600	390	7.8	23000
P	PRG - Industrial	_	410	1.6	67000	1900	450	450	1900	41000	800	310	5100	20000	5100	1000	100000
CHI	CHHSL - Residential	thi	30	0.07	5200	150	1.7	17.1	(199	3000	150	18	380	1600	380	530	23000
E	CHIISL - Industrial	ial	380	0.24	63000	1700	7.5	37.1	3200	38000	3500	180	4800	16000	4800	6700	100000
1-V	3/6/2001 2	1	•	63	,	,	,	•	,			,	,		1	•	
۱-۷	3/6/2001	7		240		•	•	•	•							•	
A-10	3/6/2001	-	•	7	,		_		,		-		1		•		-
A-10	3/6/2001	2		27	1				,				-		,		
A-2	3/6/2001	-	•	57	•	•					•	,	•	•	•	•	•
A-2	3/6/2001	7	1	01			•					•	-	1	,	•	-
A-3	3/6/2001	-		53	1		٠	,		٠			,	,	•	•	•
A-3	3/6/2001	2		12	•	•	٠		•		•	•	ŧ	1	1	1	
γ-γ	3/6/2001	-	,	93	•	•	,	•	1	,	•	•	1	. 1	'	1	'
A-4	3/6/2001	C.	•	35	•	•		,	,		•					-	'
A-5	3/6/2001	-	,	250	1			, :		-					•	•	•
A-5	3/6/2001	CI	,	310	-	-	•	1		-		•	1	,	•		•
A-6	3/6/2001	_	1	60	ı	,	1	,	•	,	,	•	•	•	1	,	
A-6	3/6/2001	r i		100	ŧ	•	•	•		,	,	1	1	,	•	,	•
A-7	3/6/2001		•	Q <del>*</del> 1	ı	,	,	•	•	,	,	,	•	•	,		1
A-7	3/6/2001	2	-1	47	,	1	1:	,	٠.		1	•					
A-8	3/6/2001	-		340			j		•	,		,	1		•	•	•
A-8	3/6/2001	rı	-	19		• • • • • • • • • • • • • • • • • • • •	•	+:						)	-	1	
۸-9	3/6/2001	-		230	1	1		•			•		•	1		1	1
Α-9	3/6/2001	2	1	2G 063	1			-	,	•	1	•	•	•	t	•	'
SS-1	9/27/2001	1		61		•		• .	•	83	40	•			•	•	
-SS-1	9/27/2001	7	1	81	1	-	,			26	130	•	-	•	,	-	
SS-10	1002/27/6			QX	r	•		-	1	3.5	2.7		•	•	•	•	<u> </u>
25.10	9/27/2001			Li Ci	-				1:	3.2	2.8		•	•	-		-
7	1007//7/6		•	<u> </u>	•	•		-	-		2 :			•	•	•	•
20.2	97777901	-1	•	1 4	1			, ,	•	, S		•		•	1 1		
SS-3	9/27/2001	- 14	•	1 00	1			,		3.9	, m						
SS-4	1002/27/6	_	,	1.7			•			ĸ	78		,	•	•		,
÷SS-†	1002/12/6	rı	1	7.5	1	1		,	•	83	790		-	1	,	-	,
55-5	9/27/2001			<b>1.1</b>	•	•	•			160	170	-	1	1	•	•	•
58.5	1002/22/6	۲۱.		35			-	,	1:	500	320	• ; , , , , ,	•	•		-	-
9-55	0077770	- r	•	מ מ	•	•	•	`.	,	¥.0	1.4			•	•	•	•
23-0	1000/100	1 -		7	• • • •	•	•			1.0	) F	' '		, ,			
58-7	9/27/2001		•	1 3		· ·		, ,	,	7.7	4 2		•	•	•		ļ.,
SS-8	9/27/2001	-	1	210						4	100	1	•		1	,	
8-8-	9/27/2001	7	1	1.4	-	1	•	•	. ,	13	70			ı		٠	
6-SS	1002/12/6	-	٠	1.7			٠	•	,	6.6	3.5	1	,	٠	٠	•	•
SS-9	9/27/2001	61	1	1.7		-	,	-	,	4.8	2.9	٠		ı	1	-	•
Maxut	Maxumum Detected Value	Value	NA	340	NA	NA	NA	VV	NA	200	062	V.	NA	XX	NA	NA	VV
Exce	Exceed Residential PRG	PRG		Yes	1					Z	Yes	i	1	1	•	•	-
Exce	Exceed Industrial PRG	PRG	-	Yes	•	<u>'</u>	j	-	<u>'</u>	z	Z	<u>.</u>			-	ʻ	'
Exerci	Exceed Residential CHHSL	HHSL	•	Yes	•	  -	•		_	z	Yes	<u>'</u>	<u>,</u>	•	,	<u>.</u>	-
Ехсен	Exceed Industrial CHHSL	HHSL	,	Yes	•	•	-	-		z	z	·	-	1	ı		

All units in mg/kg
PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004.
CHHSL - California Human Health Screening Levels, January 2005
1- Hexavailent Chromium Values used
2 - There is a disagreement in this date. One source says 3/16/01, and another says 3/6/01.

TABLE 2-g Soil Historic Analytical Results for the Year 2001 Humboldt Baykeeper

						Monage	Towns of the Land of the Land	Territoria ettano				Polymerlen	Polyman Armada Hudranehore	dramarhane		
						THOUSANT .	The state of the s					i ni) inclus	Transmin III	an and an		
Sample ID	Date	Depth (ft)	TPHd/mo	TPHg	Xylenes	Benzene	Toluene	Ethyl benzene	Oil and Grease	Tetrachloro ethene	Napthalene	Acenaphthyl ene	Acenaphthyl Acenaphthen	Flanrene	Phenanthren e	Anthracene
Ph	PRG - Residential	nl	na	nn	270	0.64	520	400	nn	0.48	99	เน	3700	2700	na	22000
P.	PRG - Industrial	1	מם	na	420	1.4	520	100	na	1.3	190	τu	29000	00092	114	6400000
E	CHHSL - Residential	tial	111	##	<u> </u>	8	88	20	a	811	80	10	8	e c	<b>T</b>	20
Œ	CHHSL - Industrial	inl	иш	20	W11	TU	вu	υu	an	C11	uu	บน	иц	eu	na	na
A-1	3/6/2001 2	ı.		,	,			,	,	٠	1	·	1	,	•	
A-1	3/6/2001	<b>C1</b>		,							,	,				
A-10	3/6/2001		•					•			-				   	
A-10	3/6/2001	63	•				•						ŀ	-	1	1
A-2	3/6/2001		***************************************								-		,	1		
A-2	3/6/2001	<b>F1</b>		,		•	,			1	•					1
Α-3	3/6/2001	-			,			:			,	1				
A-3	3/6/2001	2	,			,	,				•	١				-
4 A	3/6/2001	-				•		•	•							
4	3/6/2001	r.	1			1			-			,	,	•	•	•
Λ-5	3/6/2001	-	,											•	•	
A-5	3/6/2001	[2	,	1											ı	
A-6	3/6/2001				•	•	: •			1			1	,		•
ν-6	3/6/2001	۲۱	1			,				1	•			,	•	,
A-7	3/6/2001	-			•		•				1	1		•		
ν-7	3/6/2001	7	1	1		•			,	•	•	ı	-	-	,	,
A-8	3/6/2001	_			,	,					,	•	•	•	١	
A-8	3/6/2001	r)	h	1	1		-	,	٠		1	1	1		1	•
A-9	1007/9/8		ı	•	-	•		•	•	1	1	•	•	•	-	-
A-9	3/6/2001	r	•	•	•	• ;		,	,		1	1	,	•	•	,
7.0.5	6/2//2001		•	•	•	•	•	. :			1	1	•	•	•	1
1 2	9/2//2001	~i -	ı	1	•	•			•	•	•	•		•	•	
25-10	9/27/7001	- -				-	-	•	,		•	•		•	,	•
SS-10	9/27/2001	-1	-	1			,	,	,	•	•		-		•	•
7-22	1007/17/6	- 1	•			•		•	,			•	•		-	
7.00	1007//7/6001	71 -		•	•	• *	• •	•	•		,	,		•	•	-
22.2	100002000	- r							١.	•	•	F	1	1	•	•
75	1007/7/6	1 -	,				,	•					,			· ·
SS-4	9/27/2001	اء ا			•	•			•				-	: 1	•	
SS-5	9/27/2001		1	4	•	•	•	•		-		1		•		
SS-5	1002772/6	ri	•	•		•	,			1			•	1	1	1:
9-SS	1002//2/6	_		-	,	,	,			•	1	1		•	•	,
SS-6	1002/22/6	ri	1	1	,	•	,	•:	•				• :	•	,	-
SS-7	97772001		4	•	•	•	,		'	1,		•	•			•
25-7	972772001	-1	•	•			•	•		•••	•	1	•	•	•	•
200	9/2//2001	- (	•	••	•		1		•	•	•	•	•		<u>. </u>	•
22.5	7/2//2001	•	-				•				1	1		,	•	1
6.55	1002/22/6	- F		, ,	111			• 1	:	,	•					
Maxue	Maxumum Detected Value	Value	NA	NA	Ϋ́N	AN	VV	VV	NA	NA	NA	NA	NA	VV	NA	NA
Exce	Exceed Residential PRG	PRG	,	•	•	•				-	1	•	•		-	
Exce	Exceed Industrial PRG	PRG	ı	-		,			•	•	ŀ	-	_	-	•	-
Exceed	Exceed Residential CHHSL	THHE		•	٠	٠	•	٠	١	•	•	•	•	1	•	•
Excee	Exceed Industrial CHHSL	ннзг	-	-	1	•	-	•	•		-	-	-		-	-
-					-		***************************************						-			

All units in mg/kg
PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004.
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1- Hexavalent Chromium Values used
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January 2008

TABLE 2-g
Soil Historic Analytical Results for the Year 2001
Humboldt Baykeeper

				***************************************		Paly	nuclear Arom	Polynuclear Aromatic Hydrocarbons	bons			
Sample ID	Date	Depth (ft)	Fluoranthen	Pyrene	Benzo(a) anthracene	Chrysene	Benza(b) Auornathene	Benzo(b) Benzo(k) Auoranthene	Benzo(a) pyrene	Benzo(g,h,i) perylene	indeno(1.2,3- cd) pyrene	2-methyl naphthalene
H	PRG - Residential	ini	2300	118	0.62	62	0.62	6.2	0.062	na	0.62	ta
Ь	PRG - Industrial	ĮI.	22000	0.0	2.1	210	2.1	21	17.0	иш	2.1	EQ.
CH	CHHSL - Residential	otial	113	na	611	ขแ	#U	na	0.038	nn	na	80
CEI	CIIISL - Industrial	Infin	1 111	tru	nu u	nu	t u	nu	0.13	113	g <u>r</u>	811
A-I	\$/6/2001 <sup>‡</sup>	1	٠		'	,		r	•		,	
A-1	1/6/2001	rı									,	
A-10	3/6/2001	T					. '		•	•	•	
A-10	3/6/2001		-		. ,				<u> </u>			
A-7	1/6/2/001	-	•						•			•
A.7	1004/9/8	r		. •		,						
A-3	1/6/1001	1 -				, ,					' '	
Α-3	1000/9/1										a compression of a	
-6	1/6/1001	4 -			• :	'	•	'	•		•	
7 4	3/6/2001	1		•				•	•	1	•	•
7 4	1007/0/5	٠,١		-		-	-	•	•	A STATE OF THE PARTY OF THE PAR	•	
A-5	1007/0/1		•	•					-			'
7.0	00-00	7		'			•		•	•	-	-
A-0	1/6/7001	1	•		,	•	-	•	•		•	
9-C	3/6/200	-1	,		1	•	,		•		-	-
A-7	7/8/7	-		•:	-	,	•	•	٠	•		•
A-7	3/6/2001	7	1	-		,	•		•	'	1	•
A-8	1/6/2001	_		•	•		1		,		-	-
A-8	3/6/2001	ri .	•		•	,			1	-	-	
A-9	007/9/	- -	•		٠	•	•	1	1	1	1	4 -
A-9	3/6/2001	٦.	-	•		•	•		1		-	•
1-00	1007//7/6	- 1	•			•	•	•	•		•	1
1-00	3/21/2001	,	•	•	•	,	•	•	•	•	•	•
01-00	17777001			•			•		•	•	•	•
23-ES	10077776	-1 -	1		1		-	-	•	•	•	1
1-27	1007/77/6	***************************************	•		-				•			
7-55	9/2//2001	٠.				•	•	-	•	•	•	•
25.2	1002/77/6		•	• ;	,	•	•	-	-	1	1	-
25.5	1007/17/6	7.	-	•	•	•	•	• :	•	•	•	•
4	9/27/2001	- -			•	,				-	,	
Ť.	9/27/2001	7	•	-		, , , , , ,	-		•	•		•
2	9/27/2001	-			,		•	1	١,	1	•	•
n	1007/17/6	7	-	-	-				•		-	-
0-56	10007776	- •	•	•	•	•	•		'	1	•	• •
33-0	1002/2001	7 -		•		•		* .	1	• 1	•	
55.7	1007/2/0								• {	•	1	
2.53.	9/27/2001	-			,	•		,	<u>'</u>	•		! !
SS-B	9/27/2001	n			,	•		. 1	1		,	
58-9	9727/2001	_	-	1	. 1	,						. 1
55-9	9/27/2001	r:	-	-		. ,	,		: •		,	,
Maxut	Maxumum Detected Value	Value	NA	NA	NA	NA	NA	NA	ΥN	NA	NA	NA
Exce	Exceed Residential PRG	PRG	•	•	,	,	,	-	-	-		•
Exce	Execed Industrial PRG	PRG	ŧ		,		•	•	•		٠	
Exceed	Exceed Residential CHHSL	CHHSL	-	-	-	•	-	1	-	-	,	,
Excee	Exceed Industrial CHHSL	HHSL	<u> </u>	,		١		1	t	1	•	

All units in mg/kg
PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004.
CHHSL - Colifornia Human Health Screening Levels, January 2005
1- Hexavalent Chromium Values used
ND - Not Detected
- Not analyzed
2 - There is a disagreement in this date. One source says 3/16/01, and another says 3/6/01.

#### TABLE 2-h Soil Historic Analytical Results for the Year 2003 Humboldt Baykeeper

										METALS							
Sample ID	Date	Depth (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Silver	Vanadium	Zinc
PRG -	Residential		31	0.39	5400	150	37	210	900	3100	400	23	390	1600	390	78	23000
PRG -	Industrial		410	1.6	67000	1900	450	450	1900	41000	800	310	5100	20000	5100	1000	100000
CHHSL	- Residential		30	0.07	5200	150	1.7	17 <sup>1</sup>	660	3000	150	18	380	1600	380	530	23000
CHHSL	- Industrial		380	0.24	63000	1700	7.5	37 1	3200	38000	3500	180	4800	16000	4800	6700	100000
PCS-1-3.5	4/29/2003	3.5	-	-	-	-	-	-	-	-	110	-	-	-	-	-	-
PCS-2-3.5	4/29/2003	3.5	-	1	-	-	-	-	-	-	820	-	-	-	-	-	-
PCS-3-3.5	4/29/2003	3.5	-	1	-	-	-	-	-	-	89	-	-	-	-	-	-
PCS-4-3.5	4/29/2003	3.5	-	1	-	-	-	-	-	-	99	-	-	-	-	-	-
PCS-5-3.5	4/29/2003	3.5	-	1	-	-	-	-	-	-	740	-	-	-	-	-	-
PCS-6-3.5	4/29/2003	3.5	-	-	-	-	-	-	-	-	1100	-	-	-	-	-	-
PCS-6-3.5(A)	4/29/2003	3.5	-	-	-	-	-	-	-	-	6400	-	-	-	-	-	-
PCS-6-3.5(B)	4/29/2003	3.5	-	-	-	-	-	-	-	-	310	-	-	-	-	-	-
PCS-7-3.5	4/29/2003	3.5	-	-	-	-	-	-	-	-	3.7	-	-	-	-	-	-
PCS-6 CONF-NORTH	10/17/2003	3.5	-	-	-	-	-	-	-	-	2800	-	-	-	-	-	-
PCS-6 CONF-EAST	10/17/2003	3.5	-	-	-	-	-	-	-	-	490	-	-	-	-	-	-
PCS-6 CONF-SOUTH	10/17/2003	3.5	-	-	-	-	-	-	-	-	580	-	-	-	-	-	-
PCS-6 CONF-NORTH A	10/24/2003	3.5	-	-	-	-	-	-	-	-	410	-	-	-	-	-	-
Maxumum	<b>Detected Value</b>		NA	NA	NA	NA	NA	NA	NA	NA	6400	NA	NA	NA	NA	NA	NA
Exceed Re	esidential PRG		-	-	-	-	-	-	-	-	Yes	-	-	-	-	-	-
Exceed In	ndustrial PRG		-	-	-	-	-	-		-	Yes	-	-		-	-	-
	idential CHHSL		-	-	-	-	-	-		-	Yes	-	-		-	-	-
Exceed Ind	lustrial CHHSL		-	-	-	-	-	-	-	-	Yes	-	-	-	-	-	-

All units in mg/kg

 $PRG\ -\ Preliminary\ Remediation\ Goal,\ EPA\ Region\ 9\ PRG\ Table,\ October\ 2004.$ 

CHHSL - California Human Health Screening Levels, January 2005

1- Hexavalent Chromium Values used

ND - Not Detected

`- Not analyzed

## TABLE 2-h Soil Historic Analytical Results for the Year 2003 Humboldt Baykeeper

						Monoa	romatic Hydro	carbons				Polynuclea	r Aromatic Hyd	rocarbons		
Sample ID	Date	Depth (ft)	TPHd/mo	ТРНд	Xylenes	Benzene	Toluene	Ethyl benzene	Oil and Grease	Tetrachloro ethene	Napthalene	Acenaphthyle ne	Acenaphthene	Fluorene	Phenanthrene	Anthracene
PRG - I	Residential		na	na	270	0.64	520	400	na	0.48	56	na	3700	2700	na	22000
PRG -	Industrial		na	na	420	1.4	520	400	na	1.3	190	na	29000	26000	na	6400000
CHHSL	- Residential		na	na	na	na	na	na	na	na	na	na	na	na	na	na
CHHSL	- Industrial		na	na	na	na	na	na	na	na	na	na	na	na	na	na
PCS-1-3.5	4/29/2003	3.5	-	-	-	-	-	-	-	-	ND	ND	ND	ND	ND	ND
PCS-2-3.5	4/29/2003	3.5	-	-	-	-	-	-	-	-	14.8	ND	4.72	10.5	37.2	4.18
PCS-3-3.5	4/29/2003	3.5	-	-	-	-	-	-	-	-	ND	ND	ND	ND	ND	ND
PCS-4-3.5	4/29/2003	3.5	-	-	-	-	-	-	-	-	11.22	ND	1.42	2.73	9.14	1.45
PCS-5-3.5	4/29/2003	3.5	-	-	-	-	-	-	-	-	ND	ND	ND	ND	ND	ND
PCS-6-3.5	4/29/2003	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCS-6-3.5(A)	4/29/2003	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCS-6-3.5(B)	4/29/2003	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCS-7-3.5	4/29/2003	3.5	-	-	-	-	-	-	-	-	0.022	0.013	ND	ND	0.059	0.014
PCS-6 CONF-NORTH	10/17/2003	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCS-6 CONF-EAST	10/17/2003	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCS-6 CONF-SOUTH	10/17/2003	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCS-6 CONF-NORTH A	10/24/2003	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maxumum	Detected Value		NA	NA	NA	NA	NA	NA	NA	NA	14.8	0.013	4.72	10.5	37.2	4.18
Exceed Re	sidential PRG		-	-	-	-	-	-	-	-	N	-	N	N	-	N
Exceed In	dustrial PRG		-	-	-	-	-	-	-	-	N	-	N	N	-	N
	dential CHHSL		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Exceed Ind	ustrial CHHSL		-	-	-	-	-	-	-	-	-	-	-	-	-	-

All units in mg/kg

PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004.

CHHSL - California Human Health Screening Levels, January 2005

1- Hexavalent Chromium Values used

ND - Not Detected

- Not analyzed

### TABLE 2-h Soil Historic Analytical Results for the Year 2003 Humboldt Baykeeper

						Po	lynuclear Arom	atic Hydrocarbo	ons			
Sample ID	Date	Depth (ft)	Fluoranthene	Pyrene	Benzo(a) anthracene	Chrysene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Benzo(a) pyrene	Benzo(g,h,i) perylene	indeno(1.2,3- cd) pyrene	2-methyl naphthalene
PRG -	Residential		2300	na	0.62	62	0.62	6.2	0.062	na	0.62	na
PRG -	Industrial		22000	na	2.1	210	2.1	21	0.21	na	2.1	na
CHHSL	- Residential		na	na	na	na	na	na	0.038	na	na	na
CHHSL	- Industrial		na	na	na	na	na	na	0.13	na	na	na
PCS-1-3.5	4/29/2003	3.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
PCS-2-3.5	4/29/2003	3.5	ND	8.75	6.32	ND	ND	ND	ND	ND	ND	-
PCS-3-3.5	4/29/2003	3.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
PCS-4-3.5	4/29/2003	3.5	5.48	1.94	2.22	ND	ND	ND	ND	ND	ND	-
PCS-5-3.5	4/29/2003	3.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
PCS-6-3.5	4/29/2003	3.5	-	-	-	-	-	-	-	-	-	-
PCS-6-3.5(A)	4/29/2003	3.5	-	-	-	-	-	-	-	-	-	-
PCS-6-3.5(B)	4/29/2003	3.5	-	-	-	-	-	-	-	-	-	-
PCS-7-3.5	4/29/2003	3.5	0.07	0.063	0.036	0.017	0.059	0.014	0.019	0.016	0.01	18
PCS-6 CONF-NORTH	10/17/2003	3.5	-	-	-	-	-	-	-	-	-	-
PCS-6 CONF-EAST	10/17/2003	3.5	-	-	-	-	-	-	-	-	-	-
PCS-6 CONF-SOUTH	10/17/2003	3.5	-	-	-	-	-	-	-	-	-	-
PCS-6 CONF-NORTH A	10/24/2003	3.5	-	-	-	ı	-	-	ı	-	-	-
Maxumum	Detected Value		5.48	8.75	6.32	0.017	0.059	0.014	0.019	0.016	0.01	18
Exceed Re	sidential PRG		N		Yes	N	N	N	N	-	N	-
Exceed In	dustrial PRG		N	-	Yes	N	N	N	N	-	N	-
	dential CHHSL		-	-	-		-	-	N	-	-	-
Exceed Ind	ustrial CHHSL		-	-	-	-	-	-	N	-	-	-

All units in mg/kg

PRG - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004.

CHHSL - California Human Health Screening Levels, January 2005

1- Hexavalent Chromium Values used

ND - Not Detected

- Not analyzed

TABLE 3
Chemical Exceedences in Soil Data
Humboldt Baykeeper

		Chemicals	s Exceeding	
Year	PI	RG	CHI	HSL
	Residential	Industrial	Residential	Industrial
1988	Arsenic	Arsenic	Arsenic, Chromium, Lead	Arsenic, Chromium
1990	Arsenic, Benzene	Arsenic, Benzene	Arsenic, Chromium, Lead	Arsenic, Chromium
1992	Arsenic	Arsenic	Arsenic, Chromium	Arsenic, Chromium
1995	Arsenic, Copper, Lead, Benzo(a)pyrene,Benzo(a) anthracene	Arsenic, Lead	Arsenic, Cadmium, Chromium, Copper, Lead,Benzo(a)pyrene	Arsenic, Cadmium, Chromium,Benzo(a)pyrene
1996	Antimony, Arsenic, Copper, Lead	Arsenic, Lead	Antimony, Arsenic, Chromium, Copper, Lead	Arsenic, Chromium
1999	Arsenic, Lead	Arsenic, Lead	Arsenic, Lead	Arsenic, Lead
2001	Arsenic, Lead	Arsenic	Arsenic, Lead	Arsenic
2003	Lead, Benzo(a) anthracene	Lead,Benzo(a) anthracene	Lead	Lead

 $\ensuremath{\mathsf{PRG}}$  - Preliminary Remediation Goal, EPA Region 9 PRG Table, October 2004

CHHSL - California Human Health Screening Levels, January 2005

TABLE 4-a Monitoring Well- MW-1A - Historical Groundwater Analytical Results **Humboldt Baykeeper** 

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
9/3/1992	< 50	< 500	*	ND	ND	ND	ND	*	*	<20	<5	<20	*	*	<1	<5	<5
5/20/1993	< 50	220	*	ND	ND	ND	ND	*	*	<25	<40	< 20	*	*	<5	<10	<40
6/29/1993	*	140	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9/19/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<1	<1	<5	<10	<10
11/14/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<1	<1	<5	<10	<10
4/25/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<10	<10	<5	<10	<10
7/30/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<10	<10	<5	<10	<10
3/5/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<10	<10	<5	<10	<10
11/19/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<10	<10	<5	<10	<10
5/19/1999	< 50	< 50	*	ND	ND	ND	ND	*	*	28	<40	20	<.1	<.1	<5	26	<5
6/27/2001	< 50	< 50	<175	<.35	<.5	<.5	<.5	<5	7	<5	<5	8	*	*	*	*	*
9/25/2001	< 50	< 50	<250	<.5	<.5	<.5	<.5	<5	10	<5	<15	10 <sub>uj</sub>	*	*	*	*	*
12/18/2001	< 50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1/15/2002	*	< 50	< 300	*	*	*	*	<1	7.9	1	<1	<10	*	*	*	*	*
3/12/2002	< 50	< 50	< 300	*	*	*	*	<1	7.8	<1	<1	<10	*	*	*	*	*
8/27/2002	*	< 50	<150	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
3/12/2003	*	< 50	< 500	*	*	*	*	3.52 <sub>j+</sub>	*	<1	<1	<10	*	*	*	*	*
8/27/2003	*	64	< 500	*	*	*	*	1 <sub>uj</sub>	*	*	*	*	*	*	*	*	*
2/4/2004	*	< 50	< 500	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/24/2004	*	73.5 <sup>5</sup>	<175 5	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
3/1/2005	*	< 50	<175	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/23/2005	*	< 50	< 500	*	*	*	*	0.8	*	*	*	*	*	*	*	*	*
2/28/2006	*	54	<230	*	*	*	*	< 2.0	*	*	*	*	*	*	*	*	*
8/23/2006	*	21	<230	*	*	*	*	< 2.0	*	*	*	*	*	*	*	*	*
2/20/2007	*	< 50	<170	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
Maximum																	
Detect	NA	220	NA	NA	NA	NA	NA	3.52	10	28	NA	20	NA	NA	NA	26	NA
Maximum																	
Non-Detect	< 50	< 500	< 500	< 0.5	< 0.5	< 0.5	< 0.5	< 5	NA	< 25	< 40	< 20	< 10	< 10	< 5	< 10	< 40
Comparison																	
Value <sup>1</sup>	25	250	250	0.25	0.25	0.25	0.25	3.52	10	28	20	20	5	5	2.5	26	20
Exceed PRG	-		-	N	N	N	N	Yes	N	N	Yes	N	N	N	N	N	N
Exceed MCL	-		-	N	N	N	N	N	N	N	Yes	N	-	-	N	N	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003)

- 1 Greater of maximum detected value or 1/2 of the detection limit 2 - PRG for Hexavalent Chromium
- 5- result considered suspect
- uj -analyte was not detected above the reported sample quantitation limit.

\*-Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits; reporting limits unknown;

TPHg- Total Petroleum Hydrocarbons in gasoline;

3 - PRG for Tetraethyl Lead used 4 - National Secondary Drinking Water Standard; j - an estimated quantity but the result may be biased high

na- not available;

TABLE 4-b Monitoring Well- MW-1B - Historical Groundwater Analytical Results **Humboldt Baykeeper** 

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
9/3/1992	< 50	< 500	*	ND	ND	ND	ND	*	*	<20	<5	50	*	*	<1	17	<5
5/20/1993	< 50	160	*	ND	ND	ND	ND	*	*	<25	<40	70.2	*	*	<5	39.5	<40
6/29/1993	*	80	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9/19/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<1	<1	<5	60	10
9/19/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<1	5	<5	50	<10
11/14/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<1	6	<5	40	<10
4/25/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	30	<10	96	<5	50	<10
7/30/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<10	<10	<5	40	<10
3/6/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<10	<11	<5	<10	<10
11/19/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<20	<40	30	<10	<12	<5	30	<10
5/19/1999	< 50	< 50	*	ND	ND	ND	ND	*	*	<5	<15	<5	<5	2	<5	<5	<5
6/28/2001	< 50	< 50	<175	<.35	<.5	<.5	<.5	<5	<5	<5	<5	8	*	*	*	*	*
9/25/2001	< 50	< 50	<250	<.5	<.5	<.5	<.5	<5	6	<5	<15	$10_{\rm u}$	*	*	*	*	*
12/18/2001	< 50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1/15/2002	*	< 50	<300	*	*	*	*	8.6	9.9	5.8	<1	<10	*	*	*	*	*
3/12/2002	< 50	< 50	<300	*	*	*	*	8.2	7.6	2.7	<1	<10	*	*	*	*	*
3/12/2003	*	< 50	< 50	*	*	*	*	$7.11_{j+}$	*	*	*	*	*	*	*	*	*
2/4/2004	*	130	< 500	*	*	*	*	6.4	*	*	*	*	*	*	*	*	*
3/1/2005	*	< 50	<175	*	*	*	*	10	*	*	*	*	*	*	*	*	*
2/28/2006	*	37	<230	*	*	*	*	5.6	*	*	*	*	*	*	*	*	*
8/22/2006	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2/20/2007	*	< 50	<170	*	*	*	*	7.9	*	*	*	*	*	*	*	*	*
Maximum		4.00	***		***			0.6		- 0			***	0.0	***	<b></b>	4.0
Detect	NA	160	NA	NA	NA	NA	NA	8.6	9.9	5.8	NA	70.2	NA	96	NA	60	10
Maximum		-0.0						_				1.0			_		
Non-Detect	<50	< 500	< 500	< 0.5	< 0.5	< 0.5	< 0.5	<5	NA	<25	<40	<10	<10	<12	<5	<10	<40
Comparison													_				
Value <sup>1</sup>	25	250	250	0.25	0.25	0.25	0.25	8.6	9.9	12.5	20	70.2	5	96	2.5	60	20
Exceed PRG	-	-	-	N	N	N	N	Yes	N	N	Yes	N	N	N	N	N	N
Exceed MCL	-	-	-	N	N	N	N	N	N	N	Yes	N	-	-	N	N	-

TPHmo- Total Petroleum Hydrocarbons in motor oil;

TPHd- Total Petroleum Hydrocarbons in diesel;

TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003)

1 - Greater of maximum detected value or 1/2 of the detection limit 2 - PRG for Hexavalent Chromium

\*-Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits;reporting limits unknown;

u -compound was not detected above the quantitation shown

3 - PRG for Tetraethyl Lead used 4 - National Secondary Drinking Water Standard; na- not available ;j+ -the result is an estimated quantity,

TABLE 4-c Monitoring Well- MW-2A - Historical Groundwater Analytical Results Humboldt Baykeeper

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
9/3/1992	< 50	530	*	ND	ND	ND	ND	*	*	<20	180	<20	*	*	11	<5	<5
9/3/1992	< 50	< 500	*	ND	ND	ND	ND	*	*	<20	<5	<20	*	*	<1	<5	<5
5/20/1993	< 50	420	*	ND	ND	ND	ND	*	*	<25	<40	<20	*	*	<5	<10	<40
6/29/1993	*	310	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9/19/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<1	<1	<5	<10	<10
11/14/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<1	<1	<5	<10	<10
11/14/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<1	<1	<5	<10	<10
4/25/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<10	<10	<5	<10	<10
7/29/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<10	<10	<5	<10	<10
3/5/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<10	<10	<5	<10	<10
11/19/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<10	<10	<5	<10	<10
5/19/1999	< 50	< 50	*	ND	ND	ND	ND	*	*	<5	<15	<5	<10	<10	<5	<5	<5
6/28/2001	< 50	< 50	<175	<.35	<.5	<.5	<.5	<5	11	<5	<5	<5	<1	*	*	*	*
9/26/2001	< 50	< 50	<284	*	*	*	*	<5	19	8	<15	$20_{\rm u}$	<1	*	*	*	*
12/17/2001	< 50	NS	NS	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1/15/2002	NS	< 50	<300	*	*	*	*	2.4	14	<1	<1	$11_{j}$	*	*	*	*	*
3/12/2002	< 50	< 50	<300	*	*	*	*	1.5	15	<1	<1	<10	*	*	*	*	*
8/27/2002	NS	< 50	<150	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
3/12/2003	NS	50	< 500	*	*	*	*	1 u	*	*	*	*	*	*	*	*	*
8/27/2003	NS	< 50	< 500	*	*	*	*	3.1 <sub>j</sub> .	*	*	*	*	*	*	*	*	*
2/5/2004	NS	150	< 500	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/24/2004	NS	3,420	330	*	*	*	*	2.8	*	*	*	*	*	*	*	*	*
8/24/2004	NS	5430 <sup>5</sup>	<7,500 5	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3/1/2005	NS	220	<175	*	*	*	*	3	*	*	*	*	*	*	*	*	*
8/23/2005	NS	160	< 500	*	*	*	*	1.5	*	*	*	*	*	*	*	*	*
2/27/2006	NS	130	<230	*	*	*	*	1.9	*	*	*	*	*	*	*	*	*
8/22/2006	NS	260	<230	*	*	*	*	< 2.0	*	*	*	*	*	*	*	*	*
2/20/2007	NS	< 50	<170	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
Maximum											_	_					
Detect	NA	5430	NA	NA	NA	NA	NA	3.1	19	8	180	20	NA	NA	11	NA	NA
Maximum								_							_		
Non-Detect	<50	< 500	<7500	< 0.35	< 0.5	< 0.5	<0.5	<5	NA	<25	<40	<20	<10	<10	<5	<10	<40
Comparison												••	_	_		_	
Value <sup>1</sup>	25	5430	3750	0.175	0.25	0.25	0.25	3.1	19	12.5	180	20	5	5	11	5	20
Exceed PRG	-	-	-	N	N	N	N	Yes	N	N	Yes	N	N	N	N	N	N
Exceed MCL	-	-	-	N	N	N	N	N	N	N	Yes	N	-	-	N	N	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003)

1 - Greater of maximum detected value or 1/2 of the detection limit 2 - PRG for Hexavalent Chromium 3 - PRG for Tetraethyl Lead used 4 - National Secondary Drinking Water Standard;

\*-Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits unknown; na- not available; j reported concentration estimate only.

u -compound was not detected above the quantitation shown j- the result is an estimated quantity, but the result may be biased low.

<sup>5-</sup>Sample re-analyzed out of hold time. Results presented for data quality evaluation purposes only

TABLE 4-d

Monitoring Well- MW-2B - Historical Groundwater Analytical Results
Humboldt Baykeeper

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
9/3/1992	< 50	< 500	*	ND	ND	ND	ND	*	*	<20	<5	<20	*	*	<10	15	<5
5/20/1993	< 50	78	*	ND	ND	ND	ND	*	*	<25	<40	<20	*	*	<5	15	<40
6/29/1993	*	< 50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9/19/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<1	<1	<5	10	<10
9/19/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<1	<1	<5	10	<10
11/14/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<1	1	<5	10	<10
4/25/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<10	<10	<5	10	<10
7/29/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<10	<10	<5	20	<10
3/6/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<10	<10	<5	<10	<10
11/19/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<10	<10	<5	<10	<10
5/19/1999	< 50	< 50	*	ND	ND	ND	ND	*	*	<5	<15	<5	< 0.1	14	<5	<5	<5
6/28/2001	< 50	< 50	<175	<.35	<.5	<.5	<.5	<5	23	<5	<5	<5	<1	*	*	*	*
9/26/2001	< 50	< 50	<250	*	*	*	*	<5	25	790 <sub>R</sub>	<15	20 u	<1	*	*	*	*
12/17/2001	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1/15/2002	< 50	< 50	<300	*	*	*	*	3	2.9	2.8	<1	<10	*	*	*	*	*
3/12/2002	< 50	<50	<300	*	*	*	*	2.7	27	1.2	<1	11	*	*	*	*	*
3/12/2003	*	50	< 500	*	*	*	*	3.95 <sub>j+</sub>	*	*	*	*	*	*	*	*	*
2/5/2004	*	< 50	<500 <sub>uj</sub>	*	*	*	*	2.2	*	*	*	*	*	*	*	*	*
3/1/2005	*	62	<175	*	*	*	*	2.8	*	*	*	*	*	*	*	*	*
2/28/2006	*	72	310	*	*	*	*	3.8	*	*	*	*	*	*	*	*	*
8/23/2006	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2/20/2007	*	< 50	<170	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
Maximum Detect	NA	78	NA	NA	NA	NA	NA	3.95	27	790	NA	20	NA	14	NA	20	NA
Maximum Non-Detect	<50	< 500	< 500	<0.35	< 0.5	<0.5	<0.5	<5	NA	<25	<40	<10	<10	<10	<5	<10	<40
Comparison Value <sup>1</sup>	25	250	250	0.35	0.25	0.25	0.25	3.95	27	790	20	20	5	14	2.5	20	20
Exceed PRG		-	-	N	N	N	N	Yes	N	N	Yes	N	N	N	N	N	N
Exceed MCL		-	_	N	N	N	N	N	N	N	Yes	N	-	-	N	N	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003) na- not available;

1 -Greater of maximum detected value or 1/2 of the detection limit 2 PRG for Hexavalent Chromium 3 PRG for Tetraethyl Lead used

4 -National Secondary Drinking Water Standard R Sample results rejected uj -analyte was not detected aboce the reported sample quantitation limit.

\*Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits; reporting limits unknown; u -compound was not detected above the quantitation shown

j+ - reported concentration estimate only but the result may be biased high.

TABLE 4-e
Monitoring Well- MW-3A - Historical Groundwater Analytical Results
Humboldt Baykeeper

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
9/3/1992	< 50	< 500	*	ND	ND	ND	ND	*	*	<20	<5	170	*	*	<1	<5	<5
5/20/1993	< 50	310	*	ND	ND	ND	ND	*	*	<25	<40	<20	*	*	<5	<10	<40
6/29/1993	*	210	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6/29/1993	*	240	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9/20/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<1	<1	<5	<10	<10
9/20/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<1	<1	<5	<10	<10
11/14/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<1	<1	<5	<10	<10
4/25/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<10	<10	<5	<10	<10
4/25/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<10	<10	<5	<10	<10
7/30/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<10	<10	<5	20	<10
3/5/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<10	<10	<5	<10	<10
11/19/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<10	<10	<5	<10	<10
5/20/1999	< 50	0.05	*	ND	ND	ND	ND	*	*	<5	<15	<5	<.1	2	<5	<5	<5
6/28/2001	< 50	< 50	<175	ND	ND	ND	ND	<5	23	<5	<5	<5	<1	*	*	*	*
9/26/2001	< 50	< 50	<250	<.35	0.81	<.5	<.5	<5	25	<5	<15	8 <sub>u</sub>	<1	*	*	*	*
1/15/2002	< 50	< 50	<300	*	*	*	*	15	25	3.2	<1	<10	*	*	*	*	*
3/12/2002	< 50	< 50	<300	*	*	*	*	21	15	<1	<1	11	*	*	*	*	*
8/27/2002	*	< 50	<150	*	*	*	*	<5/<5	*	*	*	*	*	*	*	*	*
3/12/2003 <sup>5</sup>	*	$50_{uj}$	< 500	*	*	*	*	22.6/20.7	*	*	*	*	*	*	*	*	*
8/27/20035	*	< 50	< 500	*	*	*	*	11./9 <sub>i</sub>	*	*	*	*	*	*	*	*	*
2/5/2004 <sup>5</sup>	*	100	< 500	*	*	*	*	9.3 / 8.0	*	*	*	*	*	*	*	*	*
8/24/2004 <sup>5</sup>	*	207	<175	*	*	*	*	7.7 / 7.6	*	*	*	*	*	*	*	*	*
3/1/2005 <sup>5</sup>	*	<50	<175	*	*	*	*	9.9/16	*	*	*	*	*	*	*	*	*
8/23/2005 <sup>5</sup>	*	<50	<500	*	*	*	*	3.8/3.2	*	*	*	*	*	*	*	*	*
2/27/2006 <sup>5</sup>	*	35	<230	*	*	*	*	7.5/7.9	*	*	*	*	*	*	*	*	*
8/22/2006 <sup>5</sup>	*	24	<230	*	*	*	*	<2.0/2.6	*	*	*	*	*	*	*	*	*
2/19/2007 <sup>5</sup>	*	<50	<170	*	*	*	*	6.1/6.1	*	*	*	*	*	*	*	*	*
Maximum		-50	1170					0.1/0.1									
Detect	NA	310	NA	NA	0.81	NA	NA	22.6	25	3.2	NA	170	NA	2	NA	20	NA
Maximum																	
Non-Detect	<50	< 500	<500	< 0.35	NA	<0.5	< 0.5	<5	NA	<10	<40	<20	<10	<10	<5	<10	<40
Comparison																	
Value <sup>1</sup>	25	310	250	0.175	0.81	0.25	0.25	22.6	25	3.2	20	170	5	5	2.5	20	20
Exceed PRG	-	-	-	N	N	N	N	Yes	N	N	Yes	N	N	N	N	N	N
Exceed MCL	-	-	-	N	N	N	N	Yes	N	N	Yes	N	-	-	N	N	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003)

- 1 Greater of maximum detected value or 1/2 of the detection limit 2 PRG for Hexavalent Chromium 3 PRG for Tetraethyl Lead used
- 4 National Secondary Drinking Water Standard; 5- MW-23A duplicate of MW-3A was also sampled and analyzed for Arsenic
- \*-Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits;reporting limits unknown; j reported concentration estimate only. na- not available;
- u -compound was not detected above the quantitation shown uj -analyte was not detected above the reported sample quantitation limit.

TABLE 4-f Monitoring Well- MW-3B - Historical Groundwater Analytical Results **Humboldt Baykeeper** 

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
9/3/1992	< 50	< 500	*	ND	ND	ND	ND	*	*	<20	<5	<20	*	*	<1	11	<5
5/20/1993	< 50	150	*	ND	ND	ND	ND	*	*	<25	<40	<20	*	*	<5	13	<40
6/29/1993	*	< 50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9/19/1995	< 50	< 50	*	ND	ND	ND	ND	*	*		<40	20	<1	8	<5	30	<10
11/14/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	10	<40	<10	<1	<1	<5	40	<10
4/25/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<10	<10	<5	20	<10
7/29/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<10	10	<5	30	<10
3/6/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<10	<10	<5	20	<10
11/19/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<10	<10	<5	40	<10
5/20/1999	< 50	< 50	*	ND	ND	ND	ND	*	*	9	<40	19	<1	5	<5	27	8
6/28/2001	< 50	< 50	<175	<.35	<.5	<.5	<.5	<5	6	<5	<5	6	*	*	*	*	*
9/26/2001	< 50	< 50	<250	*	*	*	*	<5	8	15 <sub>u</sub>	<15	13 <sub>u</sub>	*	*	*	*	*
1/15/2002	< 50	< 50	<300	*	*	*	*	4.4	9	1.4	<1	<10	*	*	*	*	*
3/12/2002	< 50	< 50	<300	*	*	*	*	4.4	8.5	<1	<1	11	*	*	*	*	*
3/12/2003	*	< 50	< 500	*	*	*	*	$6.01_{j+}$	*	*	*	*	*	*	*	*	*
2/5/2004	*	58 j	<500 <sub>uj</sub>	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
3/1/2005	*	< 50	<175	*	*	*	*	6.1	*	*	*	*	*	*	*	*	*
2/27/2006	*	38	<230	*	*	*	*	5	*	*	*	*	*	*	*	*	*
8/22/2006	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2/20/2007	*	< 50	<170	*	*	*	*	5.5	*	*	*	*	*	*	*	*	*
Maximum																	
Detect	NA	150	NA	NA	NA	NA	NA	6.01	9	10	NA	19	NA	10	NA	40	8
Maximum	.50	.500	.500	.0.25	.0.5	.0.5	.0.5		NT A	-25	.40	.20	-10	-10	.5	NT.A	.40
Non-Detect	<50	< 500	<500	<0.35	<0.5	<0.5	<0.5	<5	NA	<25	<40	<20	<10	<10	<5	NA	<40
Comparison	25	250	250	0.175	0.25	0.25	0.25	6.01	9	12.5	20	19	_	10	2.5	40	20
Value <sup>1</sup> Exceed PRG		250	250	0.175	0.25	0.25 N	0.25 N	Yes	N N	12.5 N	Yes	19 N	5 N	10 N	2.5 N	40 N	20 N
Exceed MCL	-		-	N N	N N	N N	N N	Y es N	N N	N	Yes	N	-	IN	N N	N N	
Exceed MCL	-	-	-	IN	IN	IN	IN	IN	IN	IN	res	IN	-	-	IN	IN	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003)

- 1 Greater of maximum detected value or 1/2 of the detection limit 2 - PRG for Hexavalent Chromium
- 3 PRG for Tetraethyl Lead used 4 National Secondary Drinking Water Standard \*-Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits;reporting limits unknown; na- not available;
- uj -analyte was not detected aboce the reported sample quantitation limit.
- j reported concentration estimate only.
- j+ -reported concentration estimate only but the result may be biased high
- u -compound was not detected above the quantitation shown

TABLE 4-g Monitoring Well- MW-4A - Historical Groundwater Analytical Results **Humboldt Baykeeper** 

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
9/3/1992	< 50	< 500	*	ND	ND	ND	ND	*	*	<20	6	<20	*	*	<1	<5	<5
5/20/1993	< 50	160	*	ND	ND	ND	ND	*	*	<25	<40	<20	*	*	<5	<10	<40
6/29/1993	*	130	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9/20/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	*	*	10	8	<1	<5	<10	<10
11/14/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	7	<1	<5	<10	<10
4/26/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<10	<10	<5	<10	<10
7/29/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<10	<10	<5	<10	<10
3/5/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<10	<10	<5	<10	<10
11/20/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<10	<10	<5	<10	<10
5/19/1999	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	7	5	1	<5	<5	9
6/28/2001	< 50	< 50	<175	<.35	ND	<.5	<.5	<5	14	<5	<5	10	<1	*	*	*	*
9/25/2001	< 50	66	<250	<.5	1.6 <sub>u</sub>	<.5	<.5	<5	15	<5	<15	$9_{\rm u}$	<5	*	*	*	*
1/14/2002	< 50	< 50	<300	*	<.5	*	*	<1	11	5.4	<1	43 <sub>j</sub>	*	*	*	*	*
3/12/2002	< 50	< 50	<300	*	*	*	*	<1	14	<1	<1	<10	*	*	*	*	*
8/27/2002	*	<56	<170	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
3/12/2003	*	50	< 500	*	*	*	*	1 <sub>u</sub>	*	*	*	*	*	*	*	*	*
8/27/2003	*	< 50	< 500	*	*	*	*	2.8 <sub>i</sub>	*	*	*	*	*	*	*	*	*
2/5/2004	*	86	< 500	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/24/2004	*	58 <sup>5</sup>	<175 5	*	*	*	*	2.4	*	*	*	*	*	*	*	*	*
3/1/2005	*	73	<175	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/23/2005	*	< 50	< 500	*	*	*	*	1.1	*	*	*	*	*	*	*	*	*
2/28/2006	*	34	<230	*	*	*	*	1.9	*	*	*	*	*	*	*	*	*
8/22/2006	*	28	<230	*	*	*	*	<2.0	*	*	*	*	*	*	*	*	*
2/19/2007	*	< 50	<170	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
Maximum																	
Detect	NA	160	NA	NA	NA	NA	NA	2.8	15	5.4	6	43	8	1	NA	NA	9
Maximum																	
Non-Detect	<50	< 500	< 500	< 0.35	< 0.5	< 0.5	< 0.5	<5	NA	<25	<40	<20	<10	<10	<5	<10	<40
Comparison																	
Value <sup>1</sup>	25	250	250	0.175	0.25	0.25	0.25	2.8	15	12.5	20	43	8	5	2.5	5	20
Exceed PRG	-	-	-	N	N	N	N	Yes	N	N	Yes	N	N	N	N	N	N
Exceed MCL	-	-	-	N	N	N	N	N	N	N	Yes	N	-	-	N	N	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003)

- 1 Greater of maximum detected value or 1/2 of the detection limit 2 - PRG for Hexavalent Chromium
- \*-Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits;reporting limits unknown;
- 5- result considered suspect uj -analyte was not detected above the reported sample quantitation limit.
- u -compound was not detected above the quantitation shown

TPHg- Total Petroleum Hydrocarbons in gasoline;

3 - PRG for Tetraethyl Lead used 4 - National Secondary Drinking Water Standard; na- not available;

j - reported concentration estimate only.

TABLE 4-h
Monitoring Well- MW-5A - Historical Groundwater Analytical Results
Humboldt Baykeeper

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
9/3/1992	< 50	< 500	*	ND	ND	ND	ND	*	*	<20	<5	50	*	*	<1	<5	<5
5/20/1993	< 50	92	*	ND	ND	ND	ND	*	*	<25	<40	<20	*	*	<5	<10	<40
6/29/1993	*	60	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4/25/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	30	<10	<10	<5	<10	<10
7/29/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<10	<10	<5	<10	<10
3/5/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<10	<10	<5	<10	<10
11/20/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<10	<10	<5	<10	<10
12/17/2001	< 50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1/15/2002	*	< 50	<300	*	*	*	*	1.3	43	6.3	<1	34 <sub>j</sub>	*	*	*	*	*
3/12/2002	< 50	< 50	< 300	*	*	*	*	1 <sub>u</sub>	31	2.8	<1	15 j	*	*	*	*	*
2/5/2004	*	74 <sub>j</sub>	<500 <sub>uj</sub>	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
3/1/2005	*	<50	<175	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/23/2005	*	< 50	< 500	*	*	*	*	1	*	*	*	*	*	*	*	*	*
2/28/2006	*	25	<230	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
2/19/2007	*	< 50	<170	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
Maximum																	
Detect	NA	92	NA	NA	NA	NA	NA	1.3	43	6.3	NA	50	NA	NA	NA	NA	NA
Maximum																	
Non-Detect	<50	< 500	< 500	NA	NA	NA	NA	<5	NA	<25	<40	<20	<10	<10	<5	<10	<40
Comparison																	
Value <sup>1</sup>	25	250	250	NA	NA	NA	NA	2.5	43	12.5	20	50	5	5	2.5	5	20
Exceed PRG	-	1	1	1	•	-	•	Yes	N	N	Yes	N	N	N	N	N	N
Exceed MCL	-	-	-		-	-	-	N	N	N	Yes	N	-	-	N	N	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003)

<sup>1 -</sup> Greater of maximum detected value or 1/2 of the detection limit 2 - PRG for Hexavalent Chromium 3 - PRG for Tetraethyl Lead used 4 - National Secondary Drinking Water Standard;

<sup>\*-</sup>Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits; reporting limits unknown; na- not available;

uj -analyte was not detected above the reported sample quantitation limit. j - reported concentration estimate only. u -compound was not detected above the quantitation shown

TABLE 4-i
Monitoring Well- MW-6A/6AR<sup>5</sup> - Historical Groundwater Analytical Results
Humboldt Baykeeper

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
5/20/1993	< 50	91	*	ND	ND	ND	ND	*	*	<25	<40	<20	*	*	<5	<10	<20
6/29/1993	*	< 50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4/25/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	30	<10	<10	<5	<10	30
3/6/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<10	<10	<5	<10	40
5/19/1999	< 50	< 50	*	ND	ND	ND	ND	*	*	<5	<15	8	<.1	4	<5	<5	<5
12/18/2001	< 50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1/15/2002	*	< 50	<300	*	*	*	*	2	20	1.8	<1	<10	*	*	*	*	*
3/12/2002	< 50	< 50	<300	*	*	*	*	21	16	<1	<1	10	*	*	*	*	*
2/5/2004	*	74	< 500	*	*	*	*	<2					*	*	*	*	*
3/2/2005	*	< 50	<175	*	*	*	*	2.8					*	*	*	*	*
3/10/2006 5	*	99	300	*	*	*	*	10					*	*	*	*	*
8/22/2006 5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2/19/2007 5	*	< 50	<170	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
Maximum Detect	NA	99	NA	NA	NA	NA	NA	21	20	1.8	NA	30	NA	4	NA	NA	40
Maximum Non-Detect	<50	<50	<500	NA	NA	NA	NA	<5	NA	<25	<40	<20	<10	<10	<5	<10	<20
Comparison Value <sup>1</sup>	25	99	250	NA	NA	NA	NA	21	20	12.5	20	30	5	5	2.5	5	40
Exceed PRG		•	-	N	N	N	N	Yes	N	N	Yes	N	N	N	N	N	N
Exceed MCL	-		-	N	N	N	N	Yes	N	N	Yes	N	-	•	N	N	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003)

- WICE Waxinium Containmant Level, Et A National Timary Dinking Water Standards (June 2003)
- 1 Greater of maximum detected value or 1/2 of the detection limit 2 PRG for Hexavalent Chromium 3 PRG for Tetraethyl Lead used 4 National Secondary Drinking Water Standard;
- 5 Well 6A was abandoned and replaced on March 7 2006. The well was then renamed MW-6AR
- \*- Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits; reporting limits unknown; na- not available;

TABLE 4-j Monitoring Well- MW-7A - Historical Groundwater Analytical Results Humboldt Baykeeper

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
5/20/1993	< 50	830	*	ND	ND	ND	ND	*	*	<25	<40	<20	*	*	<5	<10	<40
5/20/1993	60	1000	*	ND	ND	ND	ND	*	*	<25	<40	<20	*	*	<5	<10	<40
6/29/1993	*	3900	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9/20/1995	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<1	<1	<5	<10	<10
11/14/1995	< 50	940	*	ND	ND	ND	ND	*	*	<10	<40	<10	<1	<1	<5	<10	<10
11/14/1995	< 50	1800	*	ND	ND	ND	ND	*	*	<10	<40	10	1	<1	<5	<10	<10
4/26/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	20	<10	<10	<5	<10	<10
7/30/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<10	<10	<5	<10	<10
7/30/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<10	<10	<5	<10	<10
3/6/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<10	<10	<5	<10	<10
3/6/1997	<50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<10	<10	<5	<10	<10
11/20/1997	60	< 50	*	ND	ND	ND	ND	*	*	<10	<40	10	<10	<10	<5	<10	<10
11/20/1997	< 50	80	*	ND	ND	ND	ND	*	*	<10	<40	30	<10	<10	<5	<10	<10
5/20/1999	< 50	110	*	ND	ND	ND	ND	*	*	<5	<15	<5	0.3	<1	<5	<5	<5
5/20/1999	< 50	100	*	ND	ND	ND	ND	*	*	<5	<15	9	0.3	<1	<5	<5	<5
6/28/2001	<50/<50	78/93	<175/<175	<.35	$1.4_{\mathrm{u}}/1.5_{\mathrm{u}}$	<.5	<.5	<5/<5	<5/<5	<5/<5	<5/<5	<5/<5	<1	*	*	*	*
9/25/2001	57	340	470	<.5	<.5	<.5	<.5	<5	27	<5	<15	12 <sub>u</sub>	<5	*	*	*	*
12/18/2001	<50/<50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1/15/2002	*	<50/<50	<300/<300	*	*	*	*	<1/<1	18/22	<1/1.1	<1/<1	<10/32 j	*	*	*	*	*
3/12/2002	<50/<50	<50/<50	<300/<300	*	*	*	*	<1/<1	20/19	<1/<1	<1/<1	<10/<10	*	*	*	*	*
8/27/2002	*	< 50	<150	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
3/12/2003	*	< 50	< 500	*	*	*	*	1	*	*	*	*	*	*	*	*	*
8/27/2003	*	< 50	< 500	*	*	*	*	1.5 <sub>j</sub> .	*	*	*	*	*	*	*	*	*
2/4/2004	*	150	< 500	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/24/2004	*	3110 5	258 5	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
3/1/2005	*	160	<175	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/23/2005	*	2,800	< 500	*	*	*	*	1.1	*	*	*	*	*	*	*	*	*
2/28/2006	*	310	<230	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/22/2006	*	890	<230	*	*	*	16	<2	*	*	*	*	*	*	*	*	*
2/20/2007	*	<50	<170	*	*	*	*	<5	*	*	*		*	*	*	*	*
Maximum																	
Detect	60	3900	470	NA	NA	NA	NA	1.5	27	NA	NA	20	1	2	NA	NA	NA
Maximum																	
Non-Detect	<50	< 50	< 500	< 0.35	< 0.5	< 0.5	< 0.5	<5	<5	<25	<40	<20	<10	<10	<5	<10	<40
Comparison																	
Value <sup>1</sup>	60	3900	470	0.175	0.25	0.25	0.25	2.5	27	12.5	20	20	5	5	2.5	5	20
Exceed PRG	-	-	-	N	N	N	N	Yes	N	N	Yes	N	N	N	N	N	N
Exceed MCL	-	-	-	N	N	N	N	N	N	N	Yes	N	-	-	N	N	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003)

1 - Greater of maximum detected value or 1/2 of the detection limit 2 - PRG for Hexavalent Chromium 3 - PRG for Tetraethyl Lead used 4 - National Secondary Drinking Water Standard;

\*-Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits reporting limits unknown; j - reported concentration estimate only but the result may be biased low.

u -compound was not detected above the quantitation shown uj -analyte was not detected above the reported sample quantitation limit.

<sup>5-</sup> result considered suspect

TABLE 4-k
Monitoring Well- MW-10A - Historical Groundwater Analytical Results
Humboldt Baykeeper

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
4/26/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<10	<10	<5	<10	<10
4/26/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<10	<10	<5	<10	<10
7/30/1996	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	<10	<10	<10	<5	<10	<10
3/6/1997	< 50	< 50	*	*	*	*	*	*	*	<10	<40	<10	<10	<10	<5	<10	<10
11/20/1997	< 50	< 50	*	ND	ND	ND	ND	*	*	<10	<40	30	<10	<10	<5	<10	<10
5/20/1999	< 50	60	*	ND	ND	ND	ND	*	*	<5	<15	6	<10	<10	<5	<5	<5
6/28/2001	< 50	< 50	<175	<.35	<.5	<.5	<.5	<5	16	<5	<5	<5	<1	*	< 50	*	*
9/25/2001	< 50	100	<250	<.5	<.5	<.5	<.5	<5	18	<5	<15	8 <sub>u</sub>	<5	*	*	*	*
1/15/2002	< 50	< 50	<300	*	*	*	*	1.2	15	<1	<1	<10	*	*	*	*	*
3/12/2002	< 50	< 50	< 300	*	*	*	*	<1	10	<1	<1	<10	*	*	*	*	*
8/27/2002	*	< 50	<150	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
3/12/2003	*	50	< 500	*	*	*	*	1 u	*	*	*	*	*	*	*	*	*
8/27/2003	*	< 50	< 500	*	*	*	*	3.7 <sub>j-</sub>	*	*	*	*	*	*	*	*	*
2/4/2004	*	270	< 500	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/24/2004	*	3390 5	279 <sup>5</sup>	*	*	*	*	3.3	*	*	*	*	*	*	*	*	*
3/1/2005	*	< 50	<175	*	*	*	*	2.3	*	*	*	*	*	*	*	*	*
8/23/2005	*	170	< 500	*	*	*	*	4.4	*	*	*	*	*	*	*	*	*
2/28/2006	*	1300	240	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/22/2006	*	350	<230	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
2/20/2007	*	< 50	<170	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
Maximum																	
Detect	NA	2290	279	NA	NA	NA	NA	4.4	18	NA	NA	30	NA	NA	NA	NA	NA
Maximum																	1
Non-Detect	< 50	< 50	< 500	< 0.5	< 0.5	< 0.5	< 0.5	< 5	NA	< 10	< 40	< 10	< 10	<10	< 50	< 10	< 10
Comparison																	
Value <sup>1</sup>	25	2290	279	0.25	0.25	0.25	0.25	4.4	18	5	20	30	5	5	25	5	5
Exceed PRG	-	-	-	N	N	N	N	Yes	N	N	Yes	N	N	N	Yes	N	N
Exceed MCL	-	-	-	N	N	N	N	N	N	N	Yes	N	-	-	Yes	N	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003)

<sup>1 -</sup> Greater of maximum detected value or 1/2 of the detection limit 2 - PRG for Hexavalent Chromium 3 - PRG for Tetraethyl Lead used 4 - National Secondary Drinking Water Standard; 5 - result considered suspect j - reported concentration estimate only but the result may be biased low

<sup>\*-</sup>Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits; reporting limits unknown; na- not available; u -compound was not detected above the quantitation shown

TABLE 4-I
Monitoring Well- MW-11A - Historical Groundwater Analytical Results
Humboldt Baykeeper

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
7/29/2000	71	< 50	<250	<5	<5	<5	<5	*	*	*	*	*	*	*	*	*	*
11/14/2000	< 50	170	<250	<5	<5	<5	<5	*	*	*	*	*	*	*	*	*	*
11/14/2000	< 50	140	<250	<5	<5	<5	<5	*	*	*	*	*	*	*	*	*	*
3/6/2001	< 50	21	<250	<5	<5	<5	<5	*	*	*	*	*	*	*	*	*	*
5/30/2001	< 50	< 50	<250	<5	<5	<5	<5	*	*	*	*	*	*	*	*	*	*
6/27/2001	< 50	73	<175	<.35	<.5	<.5	<.5	<5	20	<5	<5	<5	<1.2	*	*	*	*
9/25/2001	< 50	84	<250	<5	<.5	<.5	<.5	<5	13	<5	<15	24 <sub>u</sub>	<5	*	*	*	*
12/18/2001	< 50	NS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1/15/2002	*	130	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8/27/2002	*	150/100 6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3/12/2003	*	73/200 <sub>j</sub> <sup>6</sup>	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8/27/2003	*	< 50	< 50	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8/27/2003	*	<50/<500	<50/<500	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2/4/2004	*	130	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8/24/2004	*	115 5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3/2/2005	*	< 50	<175	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8/23/2005	*	94	< 500	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2/28/2006	*	77	<230	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8/22/2006	*	20	<230	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2/20/2007	*	< 50	<170	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Maximum																	
Detect	71	170	NA	NA	NA	NA	NA	NA	20	NA	NA	24	NA	NA	NA	NA	NA
Maximum	<50	-50	< 500	.=		<5	. =	ا ج.	NA		-15	.=	.5	NT A	NT A	NIA	NT A
Non-Detect	<50	<50	<500	<5	<5	<5	<.5	<5	NA	<5	<15	<5	<5	NA	NA	NA	NA
Comparison	71	170	250	0.25	0.25	0.25	0.25	2.5	20	2.5	7.5	24	2.5	NA	NA	NA	NA
Value <sup>1</sup> Exceed PRG	- 71	1/0		0.25 N	0.25 N	0.25 N	0.25 N	Yes	N	2.5 N	Yes	24 N	2.5 N	INA			
	-	-	-	N N	N	N N	N N	N Yes	N N	N	N Yes	N		-	-	-	
Exceed MCL	-	-	-	IN	IN	N	N	IN	N	N	IN	N	-	-	-	-	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003)

1 - Greater of maximum detected value or 1/2 of the detection limit 2 - PRG for Hexavalent Chromium 3 - PRG for Tetraethyl Lead used 4 - National Secondary Drinking Water Standard; 5- result considered suspect 6- Results within quantitation range; chromatographic pattern not typical of fuel.

<sup>\*-</sup>Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits; reporting limits unknown; na- not available; u -compound was not detected above the quantitation shown

TABLE 4-m Monitoring Well- MW-11B - Historical Groundwater Analytical Results Humboldt Baykeeper

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
7/29/2000	< 50	< 50	<250	<5	<5	<5	<5	*	*	*	*	*	*	*	*	*	*
11/14/2000	< 50	< 50	<250	<5	<5	<5	<5	*	*	*	*	*	*	*	*	*	*
3/6/2001	< 50	< 50	<250	<5	<5	<5	<5	*	*	*	*	*	*	*	*	*	*
5/30/2001	< 50	< 50	<250	<5	<5	<5	<5	*	*	*	*	*	*	*	*	*	*
6/27/2001	< 50	< 50	<250	<.35	<.5	<.5	<.5	<5	<5	<5	<5	<5	<1	*	*	*	*
9/25/2001	< 50	< 50	<175	<.5	<.5	<.5	<.5	<5	<5	<5	<15	12	<5	*	*	*	*
Maximum																	
Detect	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12	NA	NA	NA	NA	NA
Maximum Non-Detect	<50	< 50	<250	<5	<5	<5	<5	<5	<5	<5	<15	<5	<5	NA	NA	NA	NA
Comparison Value <sup>1</sup>	25	25	125	2.5	2.5	2.5	2.5	2.5	2.5	2.5	7.5	12	2.5	NA	NA	NA	NA
Exceed PRG	-	-	-	Yes	N	N	N	Yes	N	N	Yes	N	N	-	-	-	-
Exceed MCL	-	-	-	N	N	N	N	N	N	N	N	N	-	-	-	-	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003)

1 - Greater of maximum detected value or 1/2 of the detection limit 2 - PRG for Hexavalent Chromium 3 - PRG for Tetraethyl Lead used

4 - National Secondary Drinking Water Standard;

 $\hbox{$^*$-Not analyzed/Not sampled;}\quad \hbox{ND- Not detected above laboratory reporting limits; reporting limits unknown;} \qquad \hbox{na- not available} \ ;$ 

TABLE 4-n Monitoring Well- MW-12A - Historical Groundwater Analytical Results Humboldt Baykeeper

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
7/31/2000	*	*	*	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
6/28/2001	< 50	< 50	<175	<.35	<.5	<.5	<.5	<5	<5	<5	<5	<5	<1	*	*	*	*
9/25/2001	< 50	110	<250	<.5	<.5	<.5	<.5	<5	14	6 <sub>u</sub>	<15	12 <sub>u</sub>	<5	*	*	*	*
1/15/2002	< 50	< 50	<300	*	*	*	*	2.1	21	<1	<1	14 <sub>j</sub>	*	*	*	*	*
3/12/2002	< 50	< 50	<300	*	*	*	*	2.9	22	<1	<1	12	*	*	*	*	*
8/27/2003	*	< 50	< 500	*	*	*	*	1.8 <sub>j</sub> /1 <sub>uj</sub>	*	*	*	*	*	*	*	*	*
2/4/2004	*	170 <sub>j</sub>	< 500	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/24/2004	*	277 5	<175	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
3/2/2005	*	53	<175 5	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/23/2005	*	50	< 500	*	*	*	*	1.2	*	*	*	*	*	*	*	*	*
2/28/2006	*	180	<230	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/22/2006	*	33	<230	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
2/20/2007	*	76	<170	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
Maximum																	
Detect	NA	277	NA	NA	NA	NA	NA	2.9	22	6	NA	14	NA	NA	NA	NA	NA
Maximum Non-Detect	<50	< 50	<500	< 0.35	<0.5	<0.5	<0.5	<5	<5	<5	<15	<5	<5	NA	NA	NA	NA
Comparison																	
Value <sup>1</sup>	25	277	250	0.175	0.25	0.25	0.25	2.9	22	6	7.5	14	2.5	NA	NA	NA	NA
Exceed PRG	-	1	-	N	N	N	N	Yes	N	N	Yes	N	N	-	-	-	-
Exceed MCL	-	•	-	N	N	N	N	N	N	N	N	N	-	-	-	-	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003)

- 1 Greater of maximum detected value or 1/2 of the detection limit 2 PRG for Hexavalent Chromium 3 PRG for Tetraethyl Lead used
- 4 National Secondary Drinking Water Standard; 5- result considered suspect
- \*-Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits; reporting limits unknown; na- not available;
- uj -analyte was not detected above the reported sample quantitation limit. j reported concentration estimate only but the result may be biased low.
- u -compound was not detected above the quantitation shown

TABLE 4-0
Monitoring Well-P8-A/P18-A\* - Historical Groundwater Analytical Results
Humboldt Baykeeper

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
5/19/1999	160	280	*	ND	ND	ND	ND	*	*	<5	<15	9	< 0.1	3	<5	<5	<5
6/28/2001	57	150	<175	<.35	<.5	<.5	<.5	<5	28	<5	<5	9	<1	*	*	*	*
9/25/2001	< 50	160	<250	<.5	<.5	<.5	<.5	<5	17	<5	<15	9 u	<5	*	*	*	*
9/25/2001	< 50	170	<250	<.5	<.5	<.5	<.5	<5	15	<5	<15	13 <sub>u</sub>	<5	*	*	*	*
12/18/2001	< 50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12/18/2001	< 50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1/15/2002	*	< 50	<300	*	*	*	*	3.9	23	<1	<1	29 j	*	*	*	*	*
1/15/2002	*	65 <sup>6</sup>	<300	*	*	*	*	3.5	21	3.1	<1	13 j	*	*	*	*	*
3/12/2002	< 50	< 50	<300	*	*	*	*	2	18	<1	<1	<10	*	*	*	*	*
3/12/2002	<50	78 <sup>6</sup>	<300	*	*	*	*	2.2	23	<1	<1	<10	*	*	*	*	*
8/27/2002	*	< 50	<150	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
8/27/2002	*	< 50	<150	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
3/12/2003	*	53 j 6	< 500	*	*	*	*	1 u	*	*	*	*	*	*	*	*	*
3/12/2003	*	120 j 6	< 500	*	*	*	*	1 u	*	*	*	*	*	*	*	*	*
8/27/2003	*	< 50	< 500	*	*	*	*	1 <sub>uj</sub>	*	*	*	*	*	*	*	*	*
8/27/2003	*	< 50	< 500	*	*	*	*	1 <sub>uj</sub>	*	*	*	*	*	*	*	*	*
2/5/2004	*	670	< 500	*	*	*	*	2.4	*	*	*	*	*	*	*	*	*
2/5/2004	*	660	< 500	*	*	*	*	2	*	*	*	*	*	*	*	*	*
8/24/2004	*	<50 8	<175 8	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/24/2004	*	3030 5	260 5	*	*	*	*	3	*	*	*	*	*	*	*	*	*
8/24/2004	*	3570 <sup>7</sup>	<1500 7	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8/24/2004	*	22707	<1500 7	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3/2/2005	*	1,500	<175	*	*	*	*	3.1	*	*	*	*	*	*	*	*	*
3/2/200	*	450	<175	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/23/2005	*	950	< 500	*	*	*	*	2.3	*	*	*	*	*	*	*	*	*
8/23/2005	*	1100	< 500	*	*	*	*	2.3	*	*	*	*	*	*	*	*	*
2/28/2006	*	16000	<2300	*	*	*	*	2	*	*	*	*	*	*	*	*	*
2/28/2006	*	13000	1200	*	*	*	*	2.5	*	*	*	*	*	*	*	*	*
8/22/2006	*	350	<230	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
8/22/2006	*	460	<230	*	*	*	*	<2	*	*	*	*	*	*	*	*	*
2/20/2007	*	84	<170	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
2/20/2007	*	67	<170	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
Maximum Detect	160	16000	1200	NA	1.6	NA	NA	3.9	28	3.1	NA	29	8	3	NA	NA	NA
Maximum Non-	-00	10000	1200	1.11.2		1112							ŭ		- 11.2	1112	- 11-2
Detect	<50	< 50	<2300	< 0.35	< 0.5	< 0.5	< 0.5	<5	NA	<5	<15	<10	<10	NA	<5	<5	<5
Comparison																	
Value <sup>1</sup>	160	16000	1200	0.175	1.6	0.25	0.25	3.9	28	3.1	7.5	29	8	3	2.5	2.5	2.5
Exceed PRG																	
	-	-	-	N	N	N	N	Yes	N	N	Yes	N	N	N	N	N	N
Exceed MCL	-	-	-	N	N	N	N	N	N	N	Yes	N	-	-	N	N	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003)

1 - Greater of maximum detected value or 1/2 of the detection limit 2 - PRG for Hexavalent Chromium 3 - PRG for Tetraethyl Lead used

4 - National Secondary Drinking Water Standard; 5 - result considered suspect 6- Results within quantitation range; chromatographic pattern not typical of fuel

7 -Sample re-analyzed out of hold time. 8- Result considered invalid. Sample believed to be accidentally switchd during laboratory analysis.

\* Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits, reporting limits unknown; na- not available;

u -compound was not detected above the quantitation shown uj -analyte was not detected above the reported sample quantitation limit. j - reported concentration estimate only.

TABLE 4-p Monitoring Well- P9A - Historical Groundwater Analytical Results **Humboldt Baykeeper** 

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
5/19/1999	<50	70	*	NA	ND	ND	ND	*	*	<5	<15		<.1	<1	<5	<5	<5
6/28/2001	< 50	130 <sup>6</sup>	<175	<.35	<.5	<.5	<.5	<5	120	<5	<5	12	<1.2	*	*	*	*
9/26/2001	< 50	4400	<284	*	*	*	*	<5	190	$12_{\rm u}$ < 5 $^{8}$	<15	120 <sub>u</sub>	<1	*	*	*	*
9/26/2001	< 50	4900	<284	*	*	*	*	<5	190	$130_{\rm R}/<5^{8}$	<15	110 <sub>u</sub>	<1	*	*	*	*
12/18/2001	< 50			*	*	*	*	*	*	*	*	*	*	*	*	*	*
1/15/2002	*	< 50	<300	*	*	*	*	1.8	79	8	<1	76 <sub>j</sub>	*	*	*	*	*
3/12/2002	< 50	< 50	<300	*	*	*	*	<1	14	<1	<1	<10	*	*	*	*	*
8/27/2002	*	85 <sup>6</sup>	190	*	*	*	*	<5	*	*	*	*	*	*	*	*	*
3/12/2003	*	130 <sup>6</sup>	< 500	*	*	*	*	1	*	*	*	*	*	*	*	*	*
3/1/2005	*	< 50	<175	*	*	*	*	2.3	*	*	*	*	*	*	*	*	*
Maximum Detect	NA	4900	190	NA	0.81	NA	NA	2.3	190	130	NA	120	NA	NA	NA	NA	NA
Maximum Non-Detect	<50	<50	< 500	< 0.35	NA	< 0.5	< 0.5	<5	NA	<1	<15	<10	<1.2	<1	<5	<5	<5
Comparison Value <sup>1</sup>	25	250	250	0.175	0.25	0.25	0.25	2.3	190	130	7.5	120	0.6	0.5	2.5	2.5	2.5
Exceed PRG	-	-	-	N	N	N	N	Yes	N	N	Yes	N	N	N	N	N	N
Exceed MCL	-	-	-	N	N	N	N	N	N	N	N	N	-	-	N	N	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

- 1 Greater of maximum detected value or 1/2 of the detection limit 2 - PRG for Hexavalent Chromium 3 - PRG for Tetraethyl Lead used
- 4 National Secondary Drinking Water Standard; 6 Results within quantitation range; chromatographic pattern not typical of fuel.
- 8 Copper was re-analyzed due ND- Not detected above laboratory reporting limits; reporting limits unknown; na- not available;
- \*-Not analyzed/Not sampled; j reported concentration estimate only. R - results are rejected u -compound was not detected above the quantitation shown

TABLE 4-q Monitoring Well- MW-13A - Historical Groundwater Analytical Results **Humboldt Baykeeper** 

Sampling date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035 <sup>3</sup>	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
3/8/2001	410	130	<250	310	1.2	22	17	*	*	*	*	*	*	*	*	*	*
5/31/2001	1100	810	<250	43	8.3	57	37	*	*	*	*	*	*	*	*	*	*
1/14/2002	150	67	*	3.2	< 0.5	7.5	3.3	*	*	*	*	*	*	*	*	*	*
3/13/2002	110	< 50	*	3.9	< 0.5	4.8	< 0.5	*	*	*	*	*	*	*	*	*	*
8/28/2002	280	540	*	50	<5	62	19	*	*	*	*	*	*	*	*	*	*
3/12/2003	180.6	< 50	< 500	6.9	< 0.5	5.7	< 0.5	*	*	*	*	*	*	*	*	*	*
8/28/2003	190	510	< 500	66	18	64	30	*	*	*	*	*	*	*	*	*	*
8/28/2003	170	510	< 500	59	25	62	25	*	*	*	*	*	*	*	*	*	*
Maximum Detect	1100	810	NA	310	25	64	37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Non-Detect	NA	<50	<500	NA	<0.5	NA	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Comparison																	
Value <sup>1</sup>	1100	810	250	310	25	64	37	-	•	-	-	-	-	-	-	-	-
Exceed PRG	-	-	-	Yes	N	N	N	-	-	-	-	-	-	-	-	-	-
Exceed MCL	-	-	-	Yes	N	N	N	-	-	-	-	-	-	-	-	-	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tapwater; EPA region 9 PRG Table (October 2004)

- 1 Greater of maximum detected value or 1/2 of the detection limit 2 - PRG for Hexavalent Chromium 3 - PRG for Tetraethyl Lead used 4 - National Secondary Drinking Water Standard \*-Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits;reporting limits unknown; na- not available;
- uj -analyte was not detected aboce the reported sample quantitation limit.
- j reported concentration estimate only.
- j+ -reported concentration estimate only but the result may be biased high
- u -compound was not detected above the quantitation shown

TABLE 4-r Monitoring Well- MW-13B - Historical Groundwater Analytical Results Humboldt Baykeeper

Sampling date	ТРНд	TPHd	ТРНто	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
7/31/2000	< 50	< 50	<250	< 0.5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
11/14/2000	400	290	<251	5.3	0.7	1.2	2.5	*	*	*	*	*	*	*	*	*	*
12/18/2000	170	160	<252	2.4	0.98	0.87	3.2	*	*	*	*	*	*	*	*	*	*
3/7/2001	380	120	<253	4.4	0.85	0.67	2.5	*	*	*	*	*	*	*	*	*	*
3/7/2001 (DUP)	410	120	<254	4.6	0.82	0.78	2.3	*	*	*	*	*	*	*	*	*	*
5/30/2001	180	88	<255	1.9	< 0.5	0.7	< 0.5	*	*	*	*	*	*	*	*	*	*
5/30/2001 (DUP)	180	88	<256	1.9	< 0.5	0.99	0.56	*	*	*	*	*	*	*	*	*	*
12/17/2001	720	65	*	$3.5_{J}$	< 0.5	2.6	2.3	*	*	*	*	*	*	*	*	*	*
1/14/2002	340	52	*	5.3 <sub>J</sub>	6.9	4.5	4.2	*	*	*	*	*	*	*	*	*	*
3/13/2002	$430_{J}$	< 50	*	7.7 <sub>J</sub>	8.3 <sub>J</sub>	< 0.5	5.4 <sub>J</sub>	*	*	*	*	*	*	*	*	*	*
8/28/2002	< 50	< 50	*	< 0.5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
3/12/2003	370.6	< 50	< 500	< 0.5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
8/28/2003	< 50	< 50	< 500	< 0.5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
Maximum Detect	720	290	NA	5.3	8.3	4.5	4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Non- Detect	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Comparison																	
Value <sup>1</sup>	720	290	250	5.3	8.3	4.5	4.2	-	-	_	-	-	-	-	_	_	-
Exceed PRG	-	-	-	Yes	N	N	N	-	-	-	-	-	-	-	-	-	-
Exceed MCL	-	-	-	Yes	N	N	N	-	-	-	-	-	-	-	-	-	-

TPHmo- Total Petroleum Hydrocarbons in motor oil; TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

- 1 Greater of maximum detected value or 1/2 of the detection limit 2 PRG for Hexavalent
  - e detection limit 2 PRG for Hexavalent Chromium 3 PRG for Tetraethyl Lead used
- 4 National Secondary Drinking Water Standard \*-Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits;reporting limits unknown;
- na- not available; uj -analyte was not detected aboce the reported sample quantitation limit. j reported concentration estimate only.
- j+-reported concentration estimate only but the result may be biased high u-compound was not detected above the quantitation shown

TABLE 4-s Monitoring Well- MW-14B - Historical Groundwater Analytical Results **Humboldt Baykeeper** 

Sampling date	ТРНд	TPHd	ТРНто	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
7/31/2000	< 50	< 50	<250	< 0.5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
11/14/2000	< 50	< 50	<250	>5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
3/7/2001	< 50	< 50	<250	<5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
5/30/2001	< 50	< 50	<250	<5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
12/17/2001	< 50	< 50	*	< 0.5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
3/13/2002	< 50	< 50	*	< 0.5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
8/28/2002	< 50	< 50	*	< 0.5	0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
3/12/2003	*	< 50	< 500	< 0.5	0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
8/28/2003	< 50	< 50	< 500	< 0.5	0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
Maximum Detect	NA	NA	NA	NA	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Non- Detect	<50	<50	<500	>5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Comparison Value <sup>1</sup>	25	25	250	2.5	0.25	0.25	0.25	_	_	_			_		_	_	
Exceed PRG		-	230	Yes	N	N	N										
Exceed MCL	-	•	-	N	N	N	N	-	•	-	-	-	-	-	-	-	-

TPHmo- Total Petroleum Hydrocarbons in motor oil;

TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

- 1 Greater of maximum detected value or 1/2 of the detection limit
- 2 PRG for Hexavalent Chromium 3 PRG for Tetraethyl Lead used

- 4 National Secondary Drinking Water Standard
- \*-Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits; reporting limits unknown;
- na- not available;
- uj -analyte was not detected aboce the reported sample quantitation limit. j - reported concentration estimate only.
- j+-reported concentration estimate only but the result may be biased high
- u -compound was not detected above the quantitation shown

TABLE 4-t Monitoring Well- MW-15B - Historical Groundwater Analytical Results **Humboldt Baykeeper** 

Sampling date	ТРНд	TPHd	TPHmo	Benzene	Toluene	Ethyl- Benzene	Xylenes	Arsenic	Barium	Copper	Lead	Zinc	Acenaphthene	Phenol	Cadmium	Total Chromium	Nickel
PRG	na	na	na	0.35	720	1300	210	0.045	2600	1500	0.0035	11000	370	11000	18	110 <sup>2</sup>	730
MCL	na	na	na	5	1000	700	10000	10	2000	1300	15	5000 <sup>4</sup>	na	na	5	100	na
7/31/2000	< 50	< 50	<250	< 0.5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
11/14/2000	< 50	< 50	<250	< 0.5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
3/7/2001	< 50	< 50	<250	< 0.5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
5/30/2001	< 50	< 50	<250	< 0.5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
12/17/2001	< 50	50UJ	*	< 0.5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
3/13/2002	< 50	< 50	*	< 0.5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
8/28/2002	< 50	< 50	*	< 0.5	< 0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
3/12/2003	*	< 500	< 500	< 0.5	0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
8/28/2003	< 50	50UJ	500UJ	< 0.5	0.5	< 0.5	< 0.5	*	*	*	*	*	*	*	*	*	*
Maximum Detect	NA	NA	NA	NA	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Non- Detect	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Comparison Value <sup>1</sup>	25	25	250	0.25	0.25	0.25	0.25					-	_			_	
Exceed PRG	-	-	-	N	N	N	N	-	-	-	-	-	-	-	-	-	-
Exceed MCL	-	-	-	N	N	N	N	-	-	-	-	-	-	-	-	-	-

na- not available;

TPHmo- Total Petroleum Hydrocarbons in motor oil;

TPHd- Total Petroleum Hydrocarbons in diesel; TPHg- Total Petroleum Hydrocarbons in gasoline;

PRG - Preliminary Remediation Goals for tap water; EPA region 9 PRG Table (October 2004)

MCL - Maximum Contaminant Level; EPA National Primary Drinking Water Standards (June 2003)

- 1 Greater of maximum detected value or 1/2 of the detection limit
- 2 PRG for Hexavalent Chromium 3 PRG for Tetraethyl Lead used

- 4 National Secondary Drinking Water Standard
- \*-Not analyzed/Not sampled; ND- Not detected above laboratory reporting limits; reporting limits unknown; uj -analyte was not detected aboce the reported sample quantitation limit. j - reported concentration estimate only.
- j+-reported concentration estimate only but the result may be biased high
- u -compound was not detected above the quantitation shown

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TABLE 5
List of Chemicals Exceeding PRGs and MCLs
Humbold Baykeeper

Well ID	Chemic	als Exceeding
Well ID	PRG	MCL
MW-1A	Arsenic, Lead	Lead
MW-1B	Arsenic, Lead	Lead
MW-2A	Arsenic, Lead	Lead
MW-2B	Arsenic, Lead	Lead
MW-3A	Arsenic, Lead	Arsenic, Lead
MW-3B	Arsenic, Lead	Lead
MW-4A	Arsenic, Lead	Lead
MW-5A	Arsenic, Lead	Lead
MW-6A	Arsenic, Lead	Arsenic, Lead
MW-7A	Arsenic, Lead	Lead
MW-10A	Arsenic, Lead, Cadmium	Lead, Cadmium
MW-11A	Arsenic, Lead	None
MW-11B	Benzene, Arsenic, Lead	None
MW-12A	Arsenic, Lead	None
MW-P8A	Arsenic, Lead	Lead
MW-P9A	Arsenic, Lead	None
MW- 13A	Benzene	Benzene
MW-13B	Benzene	Benzene
MW-14B	Benzene	None
MW-15B	None	None

PRG - Preliminary Remediation Goals; EPA region 9 PRG Table (October 2004)

## Table 6(a) Analytical Results Summary - Sediments July 11, 2000, Sampling Event CEA No. 07040

																			1				S-13		
																							(CONNECTION		
			S-1		S-2		S-3		S-4						S8	S9		S10		S-11		S-12	BETWEEN CLARK		S-14
	SQuiRTS -	SQuiRTS -	(EASTERN		(EASTERN		(EASTERN		(EASTERN		S6		S7		(SOUTHERN	(WESTERN		(EASTERN		(CLARK		(CLARK	SLOUGH/HUMBOLDT		(DUPLICATE
Sample ID	FRESHWATER	MARINE	DITCH)	Q	DITCH)	Q	DITCH)	Q	DITCH)	Q	(STATION C)	Q	(STATION B)	Q	DITCH)	Q DITCH)	Q	DITCH) (	Q S	SLOUGH	Q	SLOUGH)	Q BAY)	Q	OF S-4)
		Apparent																							
	Upper Effects	Effects																							
Sampling Date	Threshold	Threshold	7/11/2000		7/11/2000		7/11/2000		7/11/2000		7/12/2000		7/12/2000		7/12/2000	7/12/2000	-	7/12/2000	- 1	/12/2000		7/12/2000	7/12/2000		7/11/2000
A 4 - 4 - 4 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -				-														-	_						
Metals - mg/kg	3.000	0.2	4.7	J	0.40	IJJ	2.4		1.0	-	0.46		0.00		0.04	1 11	<del>-</del>	4.2	-	1.1	-	2.0	1 0.7	.1	4.0
Antimony		9.3	***	J	0.42	UJ	3.1	J	1.6	J	0.46	UJ	0.92	J	0.81	J 1.4	J	1.3	J	1.1	J	2.9	J 0.7	J J	1.8
Arsenic	17.00	35.00	31.80		25.00		26.60		12.40		4.80		5.60		5.40	112.00	-	6.80	-	3.60	-	10.80	2.00	J	8.00
Barium	na	48.00	72.60	_	54.60	<b>.</b>	146.00	<del></del> .	67.60	<b>.</b>	99.70		74.60	٠.	91.10	190.00	١.	56.30	-	45.70	J	87.70	J 74.90		42.40
Beryllium	na	na		J	0.22	J	0.40	J	0.25	J	0.28	J	0.33	J	0.49	J 0.50	J	0.31	J	0.18	J	0.50	J 0.35	J	0.22
Cadmium	3.00	3.0	3.2		1.2		3.7		2.8		0.55	J	0.43	J	0.25	J 0.94	J	2.3		0.67	J	1.7	J 0.19	J	2.4
Chromium	95.00	62.0	32.0		44.7		66.3		51.3		51.7		57.1		74.6	78.6	-	53.8	-	36.4		80.3	59.2		41.2
Copper	86.00	390.0	60.6		35.3	₩	105.0	$\vdash$	47.6		39.2		35.0	<u> </u>	32.6	102.0	<u> </u>	54.2		75.6		138.0	27.0	$\vdash \vdash$	38.5
Lead	127.00	400.0	145.0	_	81.0		292.0	$\vdash$	75.9	L.	649.0	<b>.</b>	71.1	١.	13.0	160.0	۲.	99.4	_	93.4	١.,	214.0	30.2	$\vdash$	102.0
Mercury	0.56	0.41		J	0.1	J	0.38	J	0.16	J	0.13	J	0.17	J	0.14	J 0.3	J	0.16	J	0.2	J	0.46	J 0.16	J	0.13
Molybdenum	na	na	NA		NA	$\sqcup$	NA	$\sqcup$	NA		NA		NA		NA	NA	<u> </u>	NA		NA	Ш	NA	NA T. C		NA
Nickel	43.00	110.0	37.6		52.0		89.0		53.3		64.0		70.1	١.	99.1	91.0		58.2		34.8		80.0	74.9		47.9
Selenium	na 4.50	1		UJ	1.1 0.13	UJ	1.6 0.2	UJ	1.2 0.14	UJ	1.2	UJ	1.3	J	1.2 0.15	UJ 1.4	UJ	1.2 L 0.14 L	JJ	1.7	J	3.9		UJ	1.1 0.21
Silver Thallium	4.50 na	3.1 na	0.15 4.1	U	4.8	U	5.4	U	3.7	U	0.15 3.7	U	0.22 4.7	J	6.8	U 0.17 7.6	U	3.5	U	0.58 3.2	J	<u>1</u> 9	J 0.16 4.3	U	3.8
Vanadium	na	57	24.2		32.9		54.8		39.7		31.3		38.8		49	69.5		45.2		27	J	60.8	42.6		32.4
Zinc	520.00	410.0	752.0		324.0		764.0		514.0	_	255.0	J	109.0	-	82.9	J 238.0	<del>                                     </del>	506.0	1	243.0	1	526.0	J 66.2	.1	404.0
ZIIIC	320.00	410.0	732.0		324.0		704.0		314.0	J	255.0	J	109.0	J	02.9	3 230.0	J	300.0	J	243.0	J	320.0	00.2	J	404.0
Semi Volatile Organic Comp	oounds ua/ka																								
Benzaldehvde	na na	na	74.0	J	ND		ND		320.0	J	ND		ND		ND	ND		ND		ND		ND	ND		ND
Phenol	48.00	130.0	440.0	UJ	440.0	UJ	690.0	UJ	420.0	UJ	520.0	UJ	390.0	UJ	410.0	UJ 360.0	UJ	420.0 L	JJ	ND		ND	460.0	J	350.0
4-Methylphenol	na	8.0	49.0	J	ND		ND		ND		ND		ND		ND	ND		ND		ND		ND	ND		ND
Napthalene	600.00	230.0	240.0	J	57.0	J	110.0	J	45.0	J	ND		ND		ND	39.0	J	ND		ND		ND	ND		43.0
Caprolactam	na	na	ND		ND		ND		ND		ND		ND		ND	ND		ND		96.0	J	ND	ND		ND
2-Methylnaphthalene	na	64.0		J	ND		120.0	J	90.0	J	ND		57.0	J	ND	44.0	J	ND		ND		ND	ND		84.0
Acenaphthylene	160.00	71.0		J	ND		ND		ND		ND		ND		ND	58.0	J	ND		ND		ND	ND 		ND
Dibenzofuran	5100	110.0		J	ND		ND	L	ND		ND		ND		ND	ND	<u> </u>	ND		ND	1	ND	ND		ND
Pentachlorophenol	na	17.0		J	10000.0	UJ	1700.0	UJ	1100.0	UJ	1300.0	UJ		UJ		UJ 910.0	UJ	1100.0 L	JJ	1100.0	UJ	3400.0		UJ	880.0
Phenanthrene	800 260	660.0 280.0		J	96.0 ND	J	160.0	J	62.0 ND	J	81.0 ND	J	100.0 44.0	J	74.0 ND	J 140.0 66.0	J	54.0 ND		580.0	١,	460.0 ND	J 52.0 ND	J	37.0 ND
Anthracene Fluoranthene	1500	1300.0		J	70.0	J	ND 170.0	J	66.0	J	110.0	J	44.0	J	82.0	J 350.0	J	54.0		100.0	J	1300.0	J 93.0	J	38.0
Pyrene	1000	2400.0		J	77.0	J	210.0	J	68.0	J	98.0	J	490.0		99.0	J 370.0	J	66.0	1	1300.0		1200.0	J 93.0	J	47.0
Chrysene	800	950.0		J	ND	+ - +	ND	╁	ND	J	ND	_	170.0	J	44.0	J 270.0	J	ND .	_	610.0	$\vdash$	820.0	J 66.0	J	ND
,		000.0		_		$\Box$					.,,_			Ť		2.5.0		'				020.0	30.0		
bis(2-Ethylhexyl)phthalate	na	na	440.0	J	410.0	J	ND		420.0	UJ	520.0	UJ	ND		410.0	UJ 360.0	UJ	ND		2400.0		10000.0	500.0		350.0
4-Nitrophenol	na	1000.0	ND	T	ND		ND		ND		ND		ND		ND	ND		ND	T	1100.0	UJ	ND	ND	Ħ	ND
2,4-Dinitrotoluene	na	na	ND		ND		ND		ND		ND		ND		ND	ND		ND		450.0	[]]	ND	ND		ND
Carbazole	na	na	ND ND	$\dashv$	ND ND	+	ND ND	1	ND		ND ND		ND ND		ND ND	37.0	I,	ND ND	$\dashv$	84.0	,I	ND ND	ND ND	H	ND ND
Benzo(a)anthracene	500	960.0	ND		ND ND	$\vdash$	ND		ND		ND		130.0	J	ND	170.0	J	ND ND		460.0	Ť	420.0	J ND	H	ND
Di-n-octylphthalate	na	61.0	ND		ND	H	ND		ND		ND		ND	Ť	ND	ND	Ť	ND		450.0	UJ	ND	ND ND		ND
Benzo(b)fluroanthene	na	1800.0	ND	$\dashv$	ND		ND		ND		99.0	J	140.0	J	ND	340.0	J	ND	$\dashv$	730.0	Ť	940.0	J 64.0	J	ND
Benzo(k)fluoranthene	13400	1800.0	ND		ND		ND		ND		ND		74.0	J	ND	95.0	J	ND		260.0	J	ND	ND		ND
Benzo(a)pyrene	700	1100.0	ND		ND		ND		ND		ND		ND		ND	160.0	J	ND		500.0		610.0	J ND		ND
Indeno(1,2,3-cd)pyrene	330	600.0	ND		ND		ND		ND		ND		ND		ND	110.0	J	ND		360.0	J	670.0	J ND		ND
Benzo(g,h,i)perylene	300	670.0	ND		ND		ND		ND		ND		ND		ND	110.0	J	ND		350.0	J	770.0	J ND		ND

Bold - Greater than UET/AET
J - Estimated result. Result is less than the Reporting Limit
na - not applicable
ND - Not Detected
U - analyte was analyzed for but not detected above the sample detection limit
Data Source for S-1 to S-14, is Preliminary Assessment Site Inspection, CARWQCB, May 7, 2001. The report refers to these samples as "soil samples" in the Sediment Sampling Section (3.2.2)

# Table 6(b) Analytical Results Summary - Sediments July 30, 2007, Sampling Event CEA No. 07040

Sample ID	SQuiRTS - FRESHWATER	SQuiRTS - MARINE	S-1 (EASTERN DITCH)	Q	S-4 (STATION C)	Q	S-5 (STATION D)	Q	S-6 (STATION B)	Q	S-7 (WESTERN DITCH)	Q
Sampling Date	Upper Effects Threshold	Apparent Effects Threshold	7/30/2007		7/30/2007		7/30/2007		7/30/2007		7/30/2007	
Metals - mg/kg												+
Antimony	3.000	9.3	2.3		3.9		3.9		1.8		2.9	T
Arsenic	17.00	35.00	19.1		30.1		695.0		37.5		107	1
Barium	na	48.00	90.7		296.0		460.0		140.0		106	1
Beryllium	na	na	0.25		0.48		0.41		0.3		0.5	$\top$
Cadmium	3.00	3.0	2.3		4.7		1.2		0.89		1	$\top$
Chromium	95.00	62.0	114.0		81.0		54.8		64.1		73.9	$\top$
Copper	86.00	390.0	57.1		154.0		61.6		64.7		84.2	1
Lead	127.00	400.0	149.0		145.0		97.2		154.0		111	1
Mercury	0.56	0.41	0.22		0.21		0.21		0.17		0.24	1
Molybdenum	na	na	1		5.90		6.4		3.20		2	1
Nickel	43.00	110.0	62.9		81.5		101.0		64.3		85.1	$\top$
Selenium	na	1	0.4		1.1		0.9		0.37		0.63	1
Silver	4.50	3.1	0.14		0.36		0.25	В	0.18		0.26	T
Thallium	na	na	0.94	В	ND		ND		ND		0.13	В
Vanadium	na	57	31		62.6		58.7		47.7		66.3	
Zinc	520.00	410.0	393.0		1030.0		319.0		206.0		236	lacksquare
PCBs - ug/kg												╁
Total PCBs	26.00	110.00	120		ND		ND		63.0		NA	Į
Pesticides - ug/kg				$\vdash$								+
4-4'- DDT	na	na	6.7		NA		5.2	JPG	17.0	J	NA	T
4,4'-DDE	na	na	ND		NA		ND		200.0		NA	工

# Table 6(b) Analytical Results Summary - Sediments July 30, 2007, Sampling Event CEA No. 07040

	SQuiRTS -	SQuiRTS -	S-1 (EASTERN		S-4		S-5		S-6 (STATION		S-7 (WESTERN	
Sample ID	FRESHWATER	MARINE	DITCH)	Q	• •	Q	(STATION D)	Q	B)	Q	DITCH)	Q
Sampling Date	Upper Effects Threshold	Apparent Effects Threshold	7/30/2007		7/30/2007		7/30/2007		7/30/2007		7/30/2007	
Dioxins/Furans, pg/g												
2,3,7,8-TCDD as TEQs	8.80	3.60	216.6		NA		592.72		402.3		NA	$\blacksquare$
Total Petroleum Hydrocarbo	ons - mg/kg			H								$\forall$
TPH - MO	na	na	ND	В	3700.0	G	380.0	G	ND		110	G
Volatile Organic Compound	l ls - ug/kg			H						Н		$\forall$
Tetrachloroethene	450.00	na	11.00		ND		ND		ND		ND	П
Toluene	5000.00	na	43.00		ND		240.0		ND		ND	耳
Semi Volatile Organic Comp	pounds, ua/ka									H		+
Benzaldehyde	na na	na	ND		NA		ND		ND		ND	$\Box$
Phenol	48.00	130.0	ND		NA		ND		ND		ND	$\Box$
4-Methylphenol	na	8.0	ND		NA		ND		ND		ND	П
Napthalene	600.00	230.0	ND		NA		ND		ND		ND	П
Caprolactam	na	na	ND		NA		ND		ND		ND	П
2-Methylnaphthalene	na	64.0	ND		NA		ND		ND		ND	П
Acenaphthylene	160.00	71.0	ND		NA		ND		ND		ND	П
Dibenzofuran	5100	110.0	ND		NA		ND		ND		ND	
Pentachlorophenol	na	17.0	ND		NA		ND		ND		ND	
Phenanthrene	800	660.0	ND		NA		ND		ND		ND	
Anthracene	260	280.0	ND		NA		ND		ND		ND	
Fluoranthene	1500	1300.0	ND		NA		ND		ND		ND	$\prod$
Pyrene	1000	2400.0	ND		NA		ND		ND		ND	$\prod$
Chrysene	800	950.0	ND		NA		ND		ND		ND	
bis(2-Ethylhexyl)phthalate	na	na	ND		NA		ND		ND		ND	
4-Nitrophenol	na	1000.0	ND	Ħ	NA		ND		ND		ND	П
2,4-Dinitrotoluene	na	na	ND		NA		ND		ND		ND	
Carbazole	na	na	ND		NA		ND		ND		ND	$\square$
Benzo(a)anthracene	500	960.0	ND		NA		ND		ND		ND	
Di-n-octylphthalate	na	61.0	ND		NA		ND		ND		ND	

# Table 6(b) Analytical Results Summary - Sediments July 30, 2007, Sampling Event CEA No. 07040

Sample ID	SQuiRTS - FRESHWATER	SQuiRTS - MARINE	S-1 (EASTERN DITCH)	Q	S-4 (STATION C)	Q	S-5 (STATION D)	Q	S-6 (STATION B)	Q	S-7 (WESTERN DITCH)	Q
	Upper Effects	Apparent Effects										
Sampling Date	Threshold	Threshold	7/30/2007		7/30/2007		7/30/2007		7/30/2007		7/30/2007	
Benzo(b)fluroanthene	na	1800.0	ND		NA		ND		ND		ND	
Benzo(k)fluoranthene	13400	1800.0	ND		NA		ND		ND		ND	
Benzo(a)pyrene	700	1100.0	ND		NA		ND		ND		ND	
Indeno(1,2,3-cd)pyrene	330	600.0	ND		NA		ND		ND		ND	
Benzo(g,h,i)perylene	300	670.0	ND		NA		ND		ND		ND	$oxed{\Box}$
Bold - Greater than UET/A	<u>l                                    </u>											$\forall$
B - Analyte found in associa	ated blank and san	nple										$\Box$
RLA - The reporting limit for	r this analyte is ele	vated due to sa	mple dilution									
NA - Not Analyzed												
na - not applicable												
ND - Not Detected												
J - Estimated result, Result	is less than the Re	eporting Limit										
PG - The percent difference	e between the origi	nal and confirm	ation analyses is	gre	eater than 40%							
U - Analyte was analyzed for												
Data Source for S-1 to S-14												
2001. The report refers to the	hese samples as ":	soil samples" in	the Sediment Sa	amp	ling Section							

Table 7 Sediment Data Collected January 2008 Humboldt Baykeeper

Parameter	Sediment 1	Sediment 2	Sediment 3	Sediment 4
2,3,7,8-TCDD	1.2	37	1.9 JA	2
Total TCDD	50	410	36	21
1,2,3,7,8-PeCDD	5.6	320	14	8.4
Total PeCDD	82	1400	59	44
1,2,3,4,7,8-HxCDD	9.8	510	22	9.3
1,2,3,6,7,8-HxCDD	21	1300	48	33
1,2,3,7,8,9-HxCDD	24	960	38	22
Total HxCCD	220	7800	290	170
1,2,3,4,6,7,8-HpCDD	430	22000 E	630	560
Total HpCDD	850	50000	1200	990
OCDD	2800 E	81000 E	3700	4000 EB
2,3,7,8-TCDF	1.8 CON	36 CON	2.5 CON	1.8 CON
Total-TCDF	38	610	38	30
1,2,3,7,8-PeCDF	2.0 J	53	2.6 J,JA	2.5 J
2,3,4,7,8,-PeCDF	2.4 J	64	3.3 J	3.4
Total PeCDF	43	1700	95	76
1,2,3,4,7,8-HxCDF	9.1	300	12	7.8
1,2,3,6,7,8-HxCDF	4.4	200	8.4	6.8
2,3,4,6,7,8-HxCDF	2.6 J	170	8.00	5.5
1,2,3,7,8,9-HxCDF	< 0.27	7.4	< 0.70	ND
Total HxCDF	120	5900	230	220
1,2,3,4,6,7,8-HpCDF	68	5300 E	170	120
1,2,3,4,7,8,9-HpCDF	6.00	280	11	6.2
Total HpCDF	250	16000	560	410
OCDF	170	5700 E	440	330

<sup>\*</sup> All data in and of pg/g

January 2008 RAM Group, Inc. (5237)

<sup>\*</sup> Analysis method SW846 8290

E Estimated result. Result concentration exceeds the calibration range.

CON Confirmation analysis

J Estimated result. Result is less than the reporting limit.

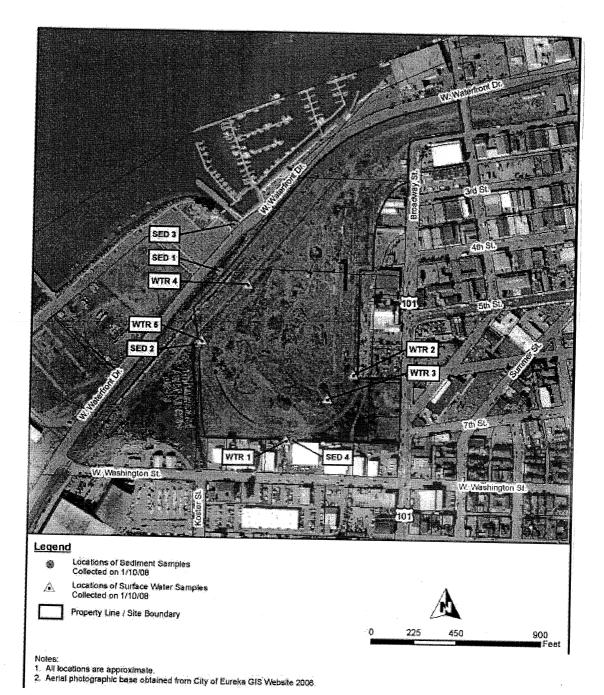


Figure 1: Site Map



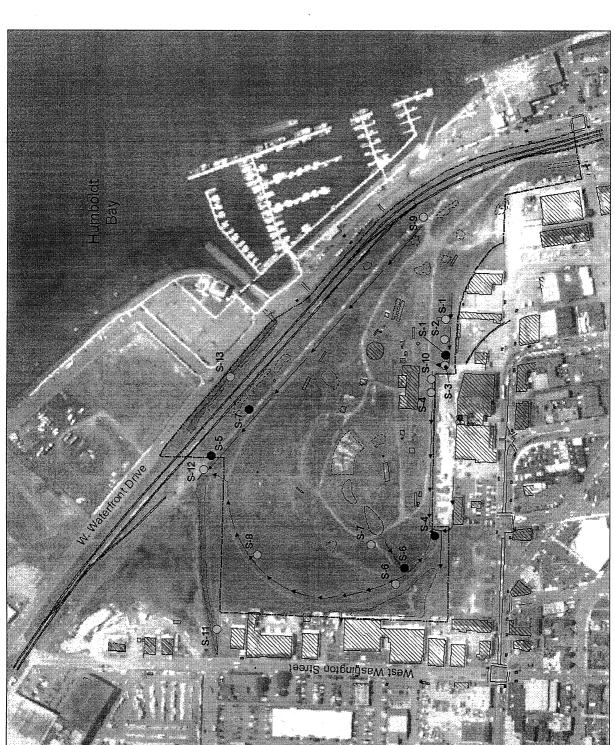
# Legend

- Sediment Samples 7/12/2000
  - Sediment Samples 7/30/2007

    Painage Ditch



Figure 2: Sediment Sample Locations



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Dungeness Crab (Cancer Magister)

Crabbers' View Dungeness Derby: Humboldt State University News

Humboldt Digital Scholar: 2006. Relationships between eelgrass (Zostera marina) habitat characteristics and juvenile Dungeness crab (Cancer magister) and other invertebrates in southern Humboldt Bay, California, USA

California Regional Water Quality Control Boards Region 1: November 2006. Fact Sheets Supporting revisions of the Section 303(d) List

NOAA, Northwest Fisheries Science Center re: Eureka, CA

NOAA, Northwest Fisheries Science Center re: Landing, CA

California Department of Fish and Game re: Washington Clams found in Humboldt Bay

U.S. Fish and Wildlife Service, August 2005, Fish Communities in Eelgrass, Oyster Culture, and Mudflat Habitats of North Humboldt Bay, California Final Report, Arcata Fisheries Technical Report Number TR 2005-02.

## APPENDIX B SITE PICTURES TAKEN IN JULY 2007 AND JANUARY 2008

January 2008





















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### APPENDIX C BIOSKETCH, LIST OF DEPOSITIONS AND TRIAL EXPERIENCE, AND 2008 SCHEDULE OF FEES AND CHARGES

January 2008 RAM Group, Inc. (5237)

### ATUL M. SALHOTRA, PH.D.

### RAM Group, Inc.

5433 Westheimer Road, Suite 725 ? Houston, TX 77056 Tel: (713) 784-5151 ? Fax: (713) 784-6105

asalhotra@ramgp.com

#### AREAS OF EXPERTISE

Exposure and risk assessment
Multimedia environmental modeling
Site characterization and remediation
Statistical analysis
Contaminant fate and transport modeling
Regulatory interaction/ negotiation
Training (Consultants, Regulators, & Responsible parties)
Communication with stakeholders

#### **EDUCATION**

1985	Ph.D., Massachusetts Institute of Technology, Cambridge: Water Resource Systems and	d
	Environmental Modeling	

- 1981 M.Eng., Asian Institute of Technology, Bangkok, Thailand: Water Resources Development
- 1979 B.Tech., Indian Institute of Technology, New Delhi, India: Civil Engineering
- 1990 Executive Enterprises, Inc.: "Environmental Regulation Course"
- 1987 National Water Well Association, "Fluid Flow in Fractured Rocks,"
- 1986 New York University: "Summer Institute in Risk Management in Environmental Health and Protection"
- 1983 Colorado State University: "Flood Predictions Estimation and Forecasting

#### **EMPLOYMENT**

1995-Present	Risk Assessment and Management, Founding President
1997-Present	Technical Consultant, Fanning, Phillips & Molnar
1986-1995	Woodward-Clyde Consultants, Vice President and Principal
1981-1985	Massachusetts Institute of Technology, Research Assistant
1980-1981	Asian Institute of Technology, Research Associate
1979-1980	Gilcon India Ltd., New Delhi, India, Junior Engineer
1978-1979	Rodio & Hazrath Engineers and Contractors, Bombay, India, Trainee Engineer

#### **AFFILIATIONS**

American Society of Civil Engineers Association of Groundwater Scientists and Engineers National Water Well Association (NWWA)

1994-1997 Member, Advisory Committee for Electronically Delivered Hazardous Materials Management Certificate Program, Center for Media& Independent Learning, UC Berkeley

1989-present	National Ground Water Association, Instructor, Principles of Subsurface Contaminant Fate and Transport Modeling, and Statistical/ Geo-statistical
	Analysis; Environmental health Risk assessment, Evaluation of Indoor Vapor Intrusion
1994-1996	Member, Advisory Committee, University of California's Nationwide Electronically
	Delivered Hazardous Materials Management Program
1989-1991	Member, Advisory Board, Certificate Program in Hazardous Materials Management,
	University of California Berkeley Extension,
1989-1992	Superfund, HMCRI's 10th, 11th, and 12th National Conference and Exhibition. Post
	Conference Seminar Instructor "Application of Risk Assessment for Environmental
	Decision Making"
1986-1991	UC Berkeley Extension Program, Instructor, Quantitative Techniques in Risk
	Assessment, Introduction to Contaminant Fate and Transport Modeling
1989-1991	University of San Francisco, Part-time Instructor, Toxicology and Risk Assessment,
	and Intermedia Pollutant Transport
1994-1996	Member, Advisory Committee, University of California's Nationwide Electronically
	Delivered Hazardous Materials Management Program

#### **CURRENT REGISTRATIONS/CERTIFICATIONS**

Approved Trainer, Risk-Based Corrective Action, American Society for Testing and Materials LPST Corrective Action Project Manager (CAPM 00696)

#### PROFILE OF PROFESSIONAL ACTIVITIES

Dr. Salhotra combines a background in civil engineering and management with expertise in multimedia environmental modeling, environmental data interpretation, exposure and risk assessment, statistical analysis, site characterization & remediation, and continuing education. His specific project experience includes:

- Assisting 12 states in the development of risk-based corrective action programs involving the
  development of guidance documents, software, and training of regulatory personnel in risk
  assessment and fate and transport modeling. Completed the development in Idaho, Illinois
  (vapor inhalation pathway), Alabama, Indian Countries, Nebraska, Kansas, New Mexico,
  Missouri, North Carolina, Washington DC, and Oklahoma.
- Working as a subcontractor to Bhate Associates contractor to United States Air Force in Europe) to develop a risk based decision support system for the management of contaminated bases in Europe.
- Project manager for about 100 leaking underground storage tank risk assessment in several states and countries.
- Project manager for several solvent contaminated sites across the country. Several of the sites
  have received no further action letters/closure letters following the review of the risk assessment
  and regulatory negotiations.

- Lead trainer for risk-based decision making for several state agencies, including Alabama, California, Georgia, Idaho, Illinois, Kansas, Nebraska, New York, Oklahoma, Texas, and Virginia. Over 4000 professionals have attended Dr. Salhotra's courses in US and overseas.
- Litigation support at a variety of hydrocarbon and solvent impacted sites. Several of these were highly visible cases with considerable public and media scrutiny.
- Project manager for Risk assessment for the RCRA permitted JF Queeny Plant in St. Louis. This chemical plan is being dismantled and the property will be sold for alternative development.
- Project Manager for risk assessment for the RCRA permitted Boeing facility at the St. Louis Airport
- Project coordinator for the development of an exposure/risk assessment decision support system for API for managing subsurface hydrocarbon contamination.
- Contaminant fate and transport and groundwater modeling for TEXTIN Superfund site.
- Project manager for baseline public health risk assessment for the Superfund site at Lawrence Livermore National Laboratory. Probabilities associated with best and conservative estimates of excess individual cancer risk were evaluated using fate and transport model and Monte Carlo simulation technique.
- Performed and supervised screening level and detailed risk assessments for several property transactions, remedial investigation and feasibility studies, and environmental impact assessments, including the selection and applications of numerical as well as analytical fate and transport models for a variety of site characterization and remediation projects.
- Task leader for groundwater flow modeling to estimate system yields and flow characteristics of a 450-square-mile virgin basin in Nevada. Supervised the selection of a numerical model, and parameters, model calibration, verification, and application.
- Task leader for risk and endangerment assessment for RI/FS investigations at a defense depot.
- Task Manager for preparation of Hydrologic Detection Monitoring Plan for Class I RCRA Part B permit application for the Casmalia Resources hazardous waste management facility. Supervised the design of the monitoring network for the unsaturated zone, saturated zone, and surface water, as well as selection of appropriate statistical techniques for data analysis.
- Developed, documented, and tested a unified multimedia (ground, surface, and air) mass transport model to evaluate land disposal of hazardous waste for the EPA including a generic pre- and post-processor for Monte Carlo analysis that can be conveniently linked to any fate and transport model to conduct uncertainty analysis.
- Developed a water treatment model for exposure assessment. Responsibilities included project management; development of state-of-the-art algorithms to simulate the removal efficiencies of various water treatment processes.
- Provided technical and management support to EPA Office of Solid Waste for the use of models for saturated and unsaturated zone flow and transport.

- Investigated alternative schemes for the disposal of ballast water for the Aleyeska Pipeline Service Company in Port Valdez, Alaska. Responsibilities included analysis of data collected during dye study; analysis of the diffuser hydraulics; analysis of near field and far field mixing using numerical models; and assessment of various schemes to improve mixing.
- Performed technical analysis for cold-water feasibility study for PG&E's Rock Creek-Cresta Project, using dynamic hydro-thermal models: fully mixed and one-dimensional, including wind mixing.
- Prepared a state-of-the-art report on electricity generation from salt gradient solar ponds for the Electric Power Research Institute, U.S.A.
- Developed a hydro-thermal model to simulate the vertical stratification in saline lakes.
   Performed detailed analysis of surface mass and energy fluxes including the effect of salinity on evaporation. The model was used to estimate optimum inflow rates for the Mediterranean-Dead Sea Hydropower Project, Israel.
- Conducted economic and technical feasibility studies of solar pond potential in Egypt, for the U.S. Agency for International Development, supplemented with extensive travel for site selection.
- Assisted in the development of the MIT Solar Pond Model.
- Developed a numerical hydro-thermal model to analyze the technical feasibility of the Qattara Hydro-Solar Power Project for the U.S. Agency for International Development.
- Participated in a multi-disciplinary study for the Sukothai Groundwater Development Project in Thailand, to assess the economic, social and technical impact of a new well field.
- Assisted in the preparation of the final report of the Bangkok Metropolitan Groundwater Management and Subsidence Studies.
- Conducted extensive training for TNRCC LPST and Industrial Hazardous Waste Programs.

#### **HONORS AND AWARDS**

Young Professional Award, Woodward-Clyde Consultants, 1988
Best Paper Award at the 4th Congress APD-IAHR, Chieng Mai, Thailand, September 9-13, 1984
Fellowship from His Majesty the King of Thailand, A.I.T., 1979-1981
Gold Medal, Institution of Engineers, India, 1979

### **PUBLICATIONS** (Selected Reports)

Risk-Based Decision Making For Petroleum Releases At Underground UST Sites in Indian Countries, Guidance Manual. Report prepared under a cooperative agreement between the

- American Society for Testing and Materials (ASTM) and the United States Environmental Protection Agency (EPA). March 1999.
- ARBCA: Alabama Risk-Based Corrective Action for Underground Storage Tanks, Guidance Manual. Report prepared for the Groundwater Branch, Alabama Department of Environmental Management, Montgomery, AL. April 1998.
- RBCA Guidance Document For Petroleum Releases. Report prepared for State of Idaho Division of Environmental Quality Remediation Bureau by Risk Assessment and Management Group, Inc. November 1996.
- Risk Based Corrective Action Guidance Document. Report prepared for the Oklahoma Corporation Commission by Risk Assessment and Management Group, Inc. October 1996.
- Site Closure Guidance For Petroleum Impacted Sites. Report prepared for New York State

  Department of Environmental Conservation by Risk Assessment and Management Group, Inc.

  October 1996.
- Guidance Manual For Risk Assessment (RG-91). Report prepared for Texas Natural Resource Conservation Commission (TNRCC) by Woodward-Clyde Consultants. May 1994.
- Documentation For API's Decision Support System For Exposure And Risk Assessment. Report prepared for American Petroleum Institute. July 1992.
- Application Of Monte Carlo Simulation To Estimate Probabilities Of Human Health Risks Due To VOC Uptake At Selected Locations. Prepared for Lawrence Livermore National Laboratory, CA. 1989.
- User's Manual For EPACML Code. Report prepared for U.S. EPA Office of Solid Waste, Washington, D.C. March 1988.
- A Generic Monte Carlo Simulation Shell For Uncertainty Analysis Of Contaminant Transport Model. Internal Woodward-Clyde report. February 1988.
- *Hydrologic Detection Monitoring Plan.* Casmalia Resources Hazardous Waste Management Facility. Prepared for Casmalia Resources, January 1988.
- Multimedia Exposure Assessment Model For Evaluating The Land Disposal Of Hazardous Wastes, Vol. I. Report prepared by Woodward-Clyde Consultants for Environmental Research Laboratory Office of Research and Development. U.S. Environmental Protection Agency, Athens, GA. Contract No. 68-03-6304. 1988.
- Multimedia Exposure Assessment Model For Evaluating The Land Disposal Of Hazardous Wastes, Vol. II (with P. Mineart). Report prepared by Woodward-Clyde Consultants for Environmental Research Laboratory Office of Research and Development. U.S. Environmental Protection Agency, Athens, GA. Contract No. 68-03-6304. 1988.
- Background Document For Unsaturated Zone Flow And Transport Module Of EPACML. Report prepared by Woodward-Clyde Consultants for Office of Solid Waste. U.S. Environmental Protection Agency, Washington, D.C. Contract No. 68-03-6304. 1988.

- Background Document For EPA's Composite Landfill Model (EPACML). Report prepared by Woodward-Clyde Consultants for Office of Solid Waste. U.S. Environmental Protection Agency, Washington, D.C. Contract No. 68-03-6304. 1988.
- A Monte Carlo Simulation Shell For Uncertainty Analysis (with R. Schanz and P. Mineart). Report prepared by Woodward-Clyde Consultants for Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens, GA. Contract No. 68-03-6304. 1988.
- Enhanced Methods For Characterizing Uncertainties In Numerical Models; Volume I:

  Methodology Development And Validation (with R. Kulkarni, G. Luster, and G. Rao). Report prepared by Woodward-Clyde Consultants for Environmental Research Laboratory Office of Research and Development. U.S. Environmental Protection Agency, Athens, GA. Contract No. 68-03-6304. 1988.
- Enhanced Methods For Characterizing Uncertainties In Computationally Intensive Models; Volume II: User's Manual And Programmer's Guide (with R. Schanz, G. Rao, and R. Kulkarni). Report prepared by Woodward-Clyde Consultants for Environmental Research Laboratory Office of Research and Development. U.S. Environmental Protection Agency, Athens, GA. Contract No. 68-03-6304. 1988.
- Contaminant Transport From Subtitle D Facilities: Sensitivity Analysis Using The Multimedia Model. Report prepared for U.S. EPA Office of Solid Waste, Washington, D.C. September 1987.
- A Water Treatment Plant Model For Pollutant Exposure Assessment, (with R. Schanz). Report prepared by Woodward-Clyde Consultants for Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens, GA. Contract No. 68-03-6304. September 1987.
- Contaminant Transport From Subtitle D Facilities: Sensitivity Analysis Using The Multimedia Model (with others). Report prepared by Woodward-Clyde Consultants for Office of Solid Waste. U.S. Environmental Protection Agency, Athens, GA. Contract No. 68-03-6304. 1987.
- A Probabilistic Methodology For Analyzing Water Quality Effects Of Urban Runoff On Rivers And Streams. Report prepared by Woodward-Clyde Consultants for Office of Water, U.S. Environmental Protection Agency, Washington, D.C. Contract No. 68-C8-0034.
- A Coupled Heat, Salt And Water Balance Model Of Evaporation And Stratification In Saline Terminal Lakes: An Application To The Dead Sea. Ph.D. Thesis, M.I.T., Department of Civil Engineering, February 1986.
- A User's Manual For The Massachusetts Institute Of Technology Solar Pond Program (Mitsol) (with J. Atkinson, E.E. Adams, and D.R.F. Harleman). Ralph M. Parsons Laboratory, Department of Civil Engineering, M.I.T., October 1983.
- Modeling The Vertical Mixing In The Dead Sea: <u>Progress Reports No. 1-8</u> (with E.E. Adams and D.R.F. Harleman). <u>Ralph M. Parsons Laboratory, Department of Civil Engineering</u>, M.I.T., January 1983.

- Solar Pond Feasibility Study For Egypt Preliminary Report (with E.E. Adams and D.R.F. Harleman). <u>Technical Report No. 288</u>, Ralph M. Parsons Laboratory, Department of Civil Engineering, M.I.T., September 1982.
- Mass Transport Of Solutes In Saturated Porous Media Flow: Analytical And Numerical Study. M.Eng. Thesis, Asian Institute of Technology, Thailand, 1981.

#### Papers

- The Application of TPH Within the Risk Based Decision Making Framework-a Nationwide Survey, 1999 Petroleum Hydrocarbons and Organic Chemicals in Groundwater, Prevention, Detection and Restoration. Paper presented at the National Groundwater Association Conference.
- Evaluation of Indoor and Outdoor Inhalation Pathway with the RBCA Tiered Approach, paper presented and included in the proceedings for the 1998 Petroleum Hydrocarbons and Organic Chemicals in Groundwater, Prevention, Detection and Restoration. Paper presented at the National Groundwater Association Conference, November, Houston, TX.
- Development and Implementation of ARBCA (Alabama Risk Based Corrective Action) Program, co-author of paper in the proceedings for the 1998 Petroleum Hydrocarbons and Organic Chemicals in Groundwater, Prevention, Detection and Restoration. Paper presented at the National Groundwater Association Conference, November, Houston, TX.
- Customized RBCA Programs, Paper presented at the 1997 Petroleum Hydrocarbons and Organic Chemicals in Groundwater, Prevention, Detection and Restoration. Paper presented at the National Groundwater Association Conference, November, Houston, TX.
- Lessons Learned from Application of RBCA at Multiple Sites, Invited Speaker 1996 Petroleum Hydrocarbons and Organic Chemicals in Groundwater, Prevention, Detection and Restoration. Paper presented at the National Groundwater Association Conference, November, Houston, TX.
- An Exposure and Risk Assessment Decision Support System poster presentation, Society of Toxicology, March 16-18, 1993, New Orleans, LA
- An Exposure/Risk Assessment Tool for UST Sites: The API Decision Support System. Paper presented at the Water Environment Federation Conference, "How Clean is Clean," January 1993, Washington, D.C.
- Evaluation of the Rackwitz-Fiessler Uncertainty Analysis Method for Environmental Fate and Transport Models (with R. W. Schanz). Water Resources Research, April 1992.
- Development of Risk-Based Clean-up Levels using Fate and Transport Models. Paper presented at the Eighth Annual Hazmacon, April 15-18, 1991, Santa Clara, California.
- Application of Monte Carlo Simulation to estimate probabilities of exposure and human health risk, National Research and Development Conference on the Control of Hazardous Materials. February 20-22, 1991, Anaheim, California.

- Estimating Cleanup Levels at Hazardous Waste Sites. Paper presented at the <u>Superfund 1990</u> Conference in Washington, D.C.
- A Monte Carlo Approach to Exposure Assessment. Paper presented at the 1990 Environmental Engineering ASCE Specialty Conference, Arlington, Virginia.
- A Subsurface Contaminant Transport Model for Exposure Assessment from Landfills (with Phillip Mineart). Paper presented at <u>Twelfth Annual Madison Waste Conference</u>. September 20-21, 1989. Madison, WI.
- Estimation of Infiltration Rates From a Landfill (with Y.J. Meeks and G. Palhegyi). Paper presented at ASCE/NCEE Conference, July 10-12, 1989. Austin, TX.
- Risk Based Approach to Evaluation of Groundwater Contamination From Land Based Waste Disposal (with L.A. Mulkey and L. Brown). Paper presented at the 1988 Joint CSCE-ASCE National Conference on Environmental Engineering, July 13-15, 1988. Vancouver, B.C.
- Improving The Efficiency of Monte Carlo Simulation For Groundwater Transport Models (with D. Veneziano, R. Kulkarni, and G. Luster). Proceedings of the conference on geostatistical, seismicity, and uncertainty methods for groundwater flow and radionuclide transport modeling. pp.155-172. Paper presented at the DOE/AECL Conference, September 15-17, 1987. San Francisco, CA.
- *Evaporation From Saline Water Bodies.* Paper presented at the <u>Seventh Annual Hydrology Days</u>. April 21-23, 1987. Colorado State University Fort Collins, Colorado.
- A Multimedia Exposure Assessment Model For Evaluating Land Disposal of Hazardous Wastes. Report prepared for <u>U.S. EPA Office of Research and Development, Athens, Georgia</u>, February 1987.
- Vertical Mixing in Thermohaline System (with E.E. Adams and D.R.F. Harleman). Ralph M. Parsons Laboratory, Department of Civil Engineering, M.I.T. Paper presented at the <a href="https://doi.org/10.1016/j.com/">Third International Symposium on Stratified Flows</a>, Pasadena, California, February 1987.
- Exposure Assessment For The Pesticide Aldicarb in Florida, USA (with J.D. Dean and E.W. Strecker). Proceedings of an International Conference on the Vulnerability of Soil and Groundwater to pollutants. Noordwijk aan Zee, The Netherlands. 1987.
- The Alpha, Beta, Gamma of Evaporation From Saline Water Bodies (with E.E. Adams and D.R.F. Harleman). Ralph M. Parsons Laboratory, Department of Civil Engineering, M.I.T. Submitted to Water Resources Research, October 1986.
- Effect of Salinity and Ionic Composition on Evaporation (with E.E. Adams and D.R.F. Harleman). Water Resources Research, September 1985.
- A Numerical Model For The Annual Operation Of A Salt Gradient Solar Pond (with E.E. Adams and D.R.F. Harleman) <u>Invited speaker</u>, U.S. <u>delegation to the U.S.-India Binational Symposium</u> on Solar Energy, Roorkee, India, August 9-11, 1985.

- Annual Cycles In The Operation Of A Salt Gradient Solar Pond (with E.E. Adams and D.R.F. Harleman). In <u>Proceedings of the 1985 Solar Energy Conference</u>, March 19-21, 1985, Knoxville, Tennessee (Paper included in conference proceedings).
- Evaporation And Stratification Study For The Dead Sea (with E.E. Adams and D.R.F. Harleman). In Proceedings of the Fourth Congress of the Asia and Pacific Division IAHR, September 9-13, 1984, Chieng Mai, Thailand.
- Mathematical Simulation Of Evaporation, Salinity And Temperature For The Hydroelectric Project At The Qattara Depression, Egypt (with E.E. Adams and D.R.F. Harleman). XX IAHR Congress, Moscow, USSR, September 1983.
- Mixing In The Epilimnion Of The Dead Sea (with E.E. Adams and D.R.F. Harleman). <u>Annual Conference ASCE Hydraulics Division</u>, M.I.T., Cambridge, August 1983.

### Testimony provided in the following Case:

- 1. United States America (Plaintiff) vs. Apex oil Company, Inc. (Defendant) East St. Louis, Illinois
- Deposed in the case
- Scheduled to provide testimony in court during trial

## RISK ASSESSMENT & MANAGEMENT GROUP, INC. 2008 SCHEDULE OF FEES AND CHARGES

#### PERSONNEL CHARGES

Following are our hourly charge rates:

<b>Labor Classification</b>	Hourly Rate (\$)
Administrative Assistant	55.00
Junior Professional	75.00
Mid Level Professional	95.00
Project Professional	110.00
Senior Professional	135.00
Principal Professional	200.00

Charges for contract personnel under RAM supervision will be according to the hourly rate corresponding to their classification.

Depositions and court appearances at 1.5 times the rates shown above.

#### OTHER PROJECT CHARGES

#### Subcontracts and Equipment Rental

The cost of services subcontracted by RAM to others and other project related costs incurred by RAM will be charged at cost plus 12%.

#### Communications

Communication fee of 3% of total labor charges will be charged for telephone, telex, facsimile, postage, and incidental copying. Courier services and express mail will be billed at cost plus 12%.

#### Document Reproduction

In-house reproduction for special requests will be charged at the following rates:

Size	Black & White
Letter through 11x17	\$0.15/page
Color Copies	\$0.50/page
Other	\$2.00/page

#### Vehicles and Mileage

The mileage charge for personal vehicles used on project assignments will be \$0.50 per mile.

Payment due on receipt of invoice.

This fee schedule contains confidential business information and is not to be copied or distributed for any purpose other than the use intended in this contract or proposal.